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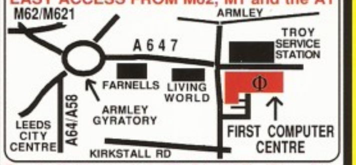
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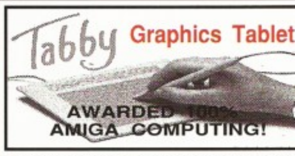
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IN THIS ISSUE

AMIGA SHOPPER JANUARY 1995 No 45

And so this is... no, I can't bring myself to say it. Anyway, Seasons Greetings and all that to everyone. This month we have the usual stonking selection of wonderful reviews, amazing articles and titanic tutorials.

We have managed to secure the services of Ron Thornton, the Emmy award-winning 3D artist for a new tutorial this month. Starting on page 28, he will be showing you how to create stunning 3D images with programs like Lightwave and Imagine. Keep this frequency clear...



Richard Baguley – Editor

The music of



If music be the food of love, which cookery book should you use? Maff Evans reviews and rates Amiga music programs.

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Foundation Imaging (the people behind the graphics for the TV program Babylon 5) shows you how to create 3D images like this.

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AMIGA SHOPPER STAR PERFORMER

Your chance to vote on the best Amiga products! Plus, you could win a spending spree! See page 36.

Commodore sold to CEI?

Is the end finally in sight for the Commodore saga? Could American company CEI have made the concluding bid?

The ongoing saga of the Commodore liquidation and sale appears to be nearly at an end. The remains of Commodore International (which went into voluntary liquidation in April) are currently being sold by the liquidators, who are confident of finalising the deal within the next few weeks. At the Future Entertainment Show in late October, David Pleasance said that he was confident of completing the deal by the end of November, although there was no sign of a deal being completed as we went to press.

The deal was supposed to be completed in early November, but there were a few extra problems which caused the delay "We have had some delay, and what we hoped to happen today is not likely to happen, "said Franklin Wilson, the Chief Liquidator of Commodore in early November. These problems appear to have been based around the incredibly complex corporate structure of Commodore International and its subsidiaries.

This has made the process of working out exactly what can be sold from Commodore International extremely difficult. The creditors (companies who were owed money by Commodore International) have also placed a number of obstacles in the way, as many of them were concerned that the deals being negotiated by the liquidator would not get them the highest possible price.



What will now happen is that one bidder (probably CEI) will submit a written bid and pay a non-refundable deposit on this bid. The Bahamian supreme court will then have to approve this deal, and details of this bid will be supplied to the other bidders. A process similar to an auction will take place, with all the involved parties attempting to outbid the others.

All of the companies who have been involved in the bidding will be invited to participate in this process, including companies such as Samsung, Philips and Escom who may have dropped out earlier. This rather unusual process has been settled on at the insistence of the US creditors of Commodore International, who are concerned that they may not get the maximum possible price if the bidding is not directly competitive.

These complications now means that there is absolutely no chance of any new Amigas arriving on the scene for Christmas, and it would probably be at least February before any new stock would arrive at the dealers.

CEI boss Alex Amor has claimed that he is already starting the process of setting up new production lines for Amigas, which he claims would cut 30 to 40 days off the time it takes to get new stocks out of the manufacturing plant.

Whether he will actually be able to use these new production lines to start building Amigas remains to be seen.

Chelsea to wind up Commodore?



Chelsea Football club is taking legal action against Commodore UK to get hold of a sum of money it is owed as part of a sponsorship deal. Commodore UK signed a five year sponsorship deal with Chelsea FC in 1987, which lead to the Amiga logo being emblazoned on all of the shirts of Chelsea players.

Chelsea FC now claim that Commodore UK have failed to pay a sum which was due as part of this deal. They are currently planning on taking legal advice to recover this money. Commodore UK do not seem overly worried by this possibility. "If Chelsea had been able to wind us up, it would have been done by now. However, they must prove that there is a genuine dispute and there is an argument as to whether there is a valid complaint," said a Commodore spokesman to CRN, a computer trade newspaper.

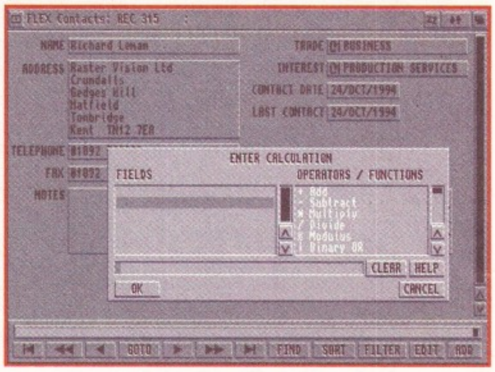
Commodore sponsored Chelsea FC over a period of three years, with the Amiga logo appearing on every Chelsea player's shirt.

WORLDWIDE AMIGA SHOW.

If you want to find out the latest news on the Commodore sale, don't forget the World of Commodore Show which will be running in the Wembley Exhibition Centre from the 9th to the 11th of December. This show is being organised by Commodore UK, and most of the Commodore management will be present at the show, so you should be able to find out what's really going on.

There will also be a large number of stalls, including one where you can meet the people who produce both this magazine and the other Amiga magazines published by Future Publishing.

Various Amiga celebrities will also be appearing at the show, including Jim Drew, the designer of the Emplant emulation system, who will be appearing on the Blittersoft stand. He is promising a first showing of the long awaited(!) PC emulation module, although it is not clear if this product will be on sale at the show. Tickets for the World of Amiga Show cost £6 for Adults and £4 for children. The ticket hotline is on ☎ 01369 7711



Info-Nexus is a new file and data manager.

INTO THE NEXUS

Optonica have announced two new products: Info-Nexus and Data-Nexus. These are the first two in a new range of cheap productivity tools for the Amiga which Optonica will be coming out with over the next few months.

Info-Nexus is a file and data manager which works in a broadly similar way to program such as SID or Directory Opus. It can be used to move files, play animations, sounds or CDXL files. Optonica are on 01455 558282.

NEW ROLL OF THE DICE

Fourth Level Developments (the distributors of the MoMiga system reviewed in this issue) have been appointed as the UK distributor for Matt Dillon's acclaimed DICE C compiler system.

This system (a version of which was included with Cliff Ramshaw's "Complete Amiga C" book) is widely regarded as one of the best C compilers available for the Amiga.

Matt has recently finished version 3, which will only be available as a commercial product. If you order the program before the 31st of December, it will only cost you £99.88. After this date, the price will rise to £129.25. Various upgrades from previous versions of DICE are also available. Fourth Level will be offering technical support by E-mail, fax or phone. Fourth Level can be contacted at: dicesales @Flevel.demon.co.uk or on ☎ 0117 955 9157.

ELSPA STRIKES AT CAR BOOT PIRATES

ELSPA (the European Leisure Software Publishers Association) has carried out a major raid on 14 stalls at a car boot sale in Killingbeck, Leeds. Over 7,000 disks were seized, with an estimated "street value" of over £100,000.

"ELSPA was behind a similar raid in Killingback almost eighteen months ago. We recently received a tip-off that the situation there now was perhaps worse than before that raid, and as a consequence we set about investigating trading activities there", said ELSPA's chief investigator John Loader.

The raid took place in early October. It's not clear at the moment how this has affected the piracy scene, but ELSPA hopes that if a sufficiently stiff sentence is delivered against the people caught in this raid, it may deter others .

"In general, we've found that it's not simply a few individuals trading in illegal computer software, "said John Loader," the activity is widespread and can be very organised... Some of the disks we have received in the past have even contained illegal pornographic images."

Wizard Modems

If you fancy getting hold of a modem which differs from the norm, you should check out these new X-Link modems from Wizard developments. Two models are available: the X-Link 14.4K gives a V32bis connection and costs £139.99.



A V-Fast model is also available for £249.99. Both models can also be used to send and receive faxes, and Wizard will be more than happy to sell you a copy of the excellent Amiga Fax program GP Fax for an extra £35. Both models are BABT approved. We'll be reviewing both in a future issue.

Spookily enough, U.S. Robotics have also just launched a new model in their extremely successful Sportster range. The snappily named Sportster 28,800 uses the new V.34 protocol to send data at a whopping 28,800 bits per second, twice as fast as a V.32bis modem. This modem is priced at £299, although the street price is likely to be around £250.

DIRECTORY OPUS 5

In an unrelated move, Wizard Developments will also be handling Directory Opus 5, which will hopefully be released in December. The author of Directory Opus (Jonathan Potter) has split from Inovatronics and is working with Greg Perry, the author of GP Fax. Directory Opus 5 will cost £59.95, with an upgrade offer of £24.99 from previous versions. Wizard developments are on ☎ 01322 272908 and U.S. Robotics are on ☎ 0753 811180.

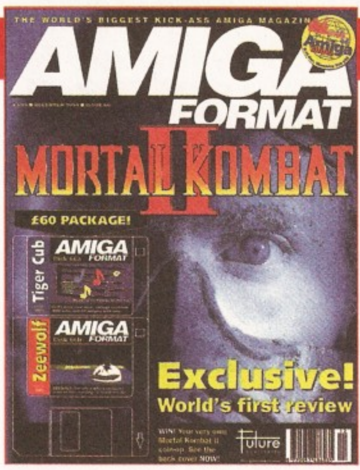
Stereo CADs

If the Amos Action column in issue 43 sparked off your curiosity for those weird 3D stereogram things, you may be interested to know that JCA Europe have just launched "Stereo CAD", an object-orientated Stereogram creator.

This program (which costs £29.95) will import any IFF file and convert it to a stereogram, or you can create your own "3D" scene within the program.

JCA Europe are on: ☎ 01734 452416, Fax: 01732 451239

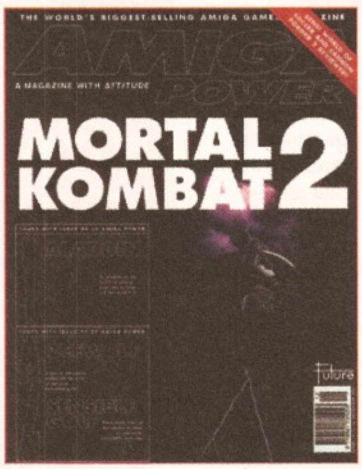
Meet our sisters



Steve Jarrat, Editor of Amiga Format – **"AF67 can be summed up in three words: Mortal Kombat two. It's on the cover, on the back page, in the contents and, nestling between pages 45 and 49, we have the world's first full review of the Amiga version. But to find out if it's any good, you'll have to buy Amiga Format. (You could buy Amiga Power but, oh so sadly, they failed to secure the exclusive review of this year's biggest game – like what we did.)**

Understandably, you might not be into beat-em-ups, so for the more serious Amiga users AF takes a close look at RISC processing, reviews the latest CD hard and software, examines a trio of 3D effects packages and pits Wordworth 3.1 against Final Writer 3."

Jonathan Davies, Editor of Amiga Power – **"The sleek, black December issue of Amiga Power is ideally suited to Amiga owners with an interest in playing games. It opens to reveal a six-page feature on Mortal Kombat 2, followed by the exclusive revelation of an Amiga version of Super Street Fighter 2. Further page-turning will uncover a huge feature on why helicopter games are so good, reviews of Zeewolf, Cannon Fodder 2 and - exclusively – Sensible World of Soccer. And as you reach the end, and find yourself back at the cover, you'll spot two disks packed with demos of Aladdin, Zeewolf and Sensible Golf."**



Interplay goes down in price

The price of the CD32/CDTV authoring system Interplay has been reduced. It'll now cost you £750 (but that does include a royalty-free stand alone player).

Optonica are also now working on Interplay II, which will have support for AGA screenmodes, as well as the ability to create ISO-9660 images which can then be used to cut CD-ROMs.

Due to a production error, the credit for the Interplay software was missed off the second edition of Amiga CD32 magazine, which was recently released.

Apologies to Optonica for not crediting the part that Interplay took in creating this product.

Optonica are on ☎ 01455 558282.

Scripts made simple

Bruce Smith books have launched the latest in their Mastering AmigaDOS series. Mark Smiddy has written "Mastering AmigaDOS – Scripts Programming", a 320 page book which covers the incredibly powerful scripting power of AmigaDos.

The price of the book is £19.95. Bruce Smith Books are on ☎ 01923 894355

Autoboot gets booted down

Following our review in issue 44, the author of the program "Autoboot" (Colin Yarnell) has decided to drop the price to £4 (including p&p).

Colin can be contacted at: 93 Manchester Road, Wilmslow, Cheshire, SK9 2JQ.

Video sources

Chroma have launched the first in a series of disks aimed at the Desktop Video user.

The DTV Toolkit Volume 1: Core F/X contains a variety of useful files for the videographer, including lo-res and interlaced wipe animations, plus Animfonts, text brushes and a selection of backgrounds.

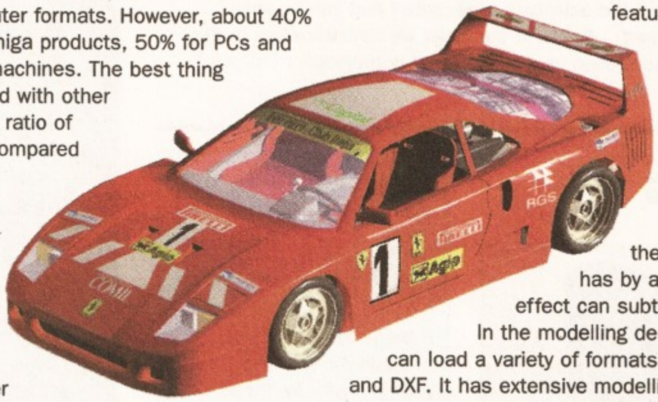
The collection is priced at £29.95, with an illustrated user guide. Other titles in this series are due to appear shortly.

Chroma are on ☎ 01328 862693.

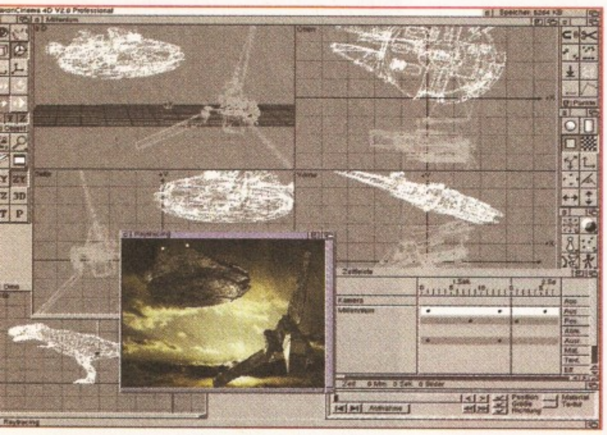
COMPUTER '94 – SHOW REPORT

From November 4th to 6th the Cologne Messe (Germany) was the venue for the Computer '94 show. Filing two whole floors of this massive complex, the show attracted over 25,000 visitors on the Saturday morning alone – all eager to get their mitts on the latest computer hardware and software.

Like most computer shows, Computer '94 caters for a number of popular computer formats. However, about 40% of the stands were for Amiga products, 50% for PCs and the remainder for other machines. The best thing about the show, compared with other European events was the ratio of serious Amiga software compared with games – about 7:1. Indeed, the show proved to be a veritable treasure trove of, as yet, undiscovered software.



Before I go on to relate how I was overwhelmed by the sheer volume of products let me make an observation of something that was present at the show, although a little less tangible. What am I talking about? The atmosphere of the show – it was fantastic. It seemed that everyone was having fun. Although, I am not entirely sure what the exact cause was, it may have been the fact stalls were throwing free products into the crowd willy-nilly. Or perhaps that you couldn't go anywhere without having promotional goodies strung around your neck or that every activity was free. I



Maxon Cinema 4D is a brand new ray-tracer from Germany, with an incredibly configurable interface.

asked Horst Brundl, Editor in chief of Amiga Plus and one of the show's organisers, why there was so many free activities as you expect to pay for them at an English show. He simply said, 'because people enjoy it'.

MOVE OVER LIGHTWAVE?

Anyway back to a more materialistic point of view. While copies of LightWave have been selling like proverbial hot-cakes in the UK, at the show I didn't see one person with a copy. Instead, one or two copies of LightWave were sitting untouched on shelves. This was not because the German Amiga-users had no interest in 3D graphics, rather they were buying another product by the bucket load – Maxon Cinema 4D pro 2.0.

I tracked down the Maxon stall to find out why every was buying this package. I met up with the programmer of the package, Philip Losch, and one of the Beta-testers. They kindly took me through features of this incredible package. The most readily apparent feature of Cinema 4D is it's interface. It seems to be a combination of some of the best features of most 3D packages, which only costs 448 DM (about £200). you are given a choice of several views, ranging from a traditional quad-view right through to a real-time perspective. Pretty much all of the programs features are available from the two button banks on the screen.

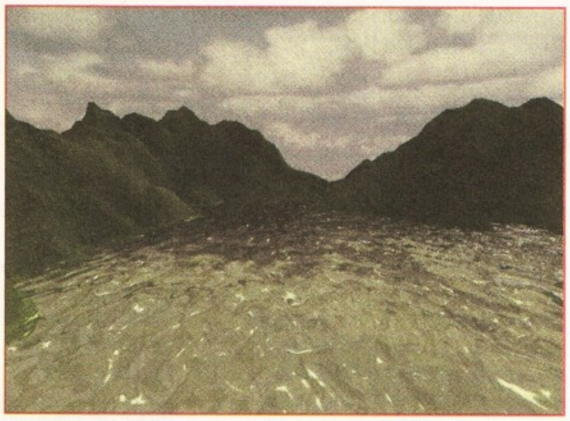
The quickest way of describing the program is a package with most of the features of Imagine with the ease of use of LightWave. It's not that the program possesses any revolutionary features, it has the usual features with a greater degree of control and numerous smaller features.

You can apply bump, transparency and luminance maps. However, you can control the amount of effect a bump has by adjusting a slider so the effect can subtle or extreme.

In the modelling department, the program can load a variety of formats such as Imagine, Sculpt and DXF. It has extensive modelling tools including splines, morphing, Boolean operators and even a fractal landscape generator. It also has a large number of primitives, which you can add to by using it's object library.

The program's animation Editor is also impressive, like LightWave it can be used as a key-frame system. However, one of its best features is that you can assign the motions of one object ,or group of objects, to another. The program is actually supplied with a mannequin-like object that can be used to animate your own humanoid models.

There are loads more features – more than there is room to cover here. However, despite being such a powerful and easy to use package, we may never see a copy over here. The reason is that Maxon are reluctant to commit large sums of money in order to translate the manuals unless there is sufficient demand. So if you would like to get hold of a 3D animation package that combines the best of Imagine and LightWave call Maxon's UK distributors, HiSoft on ☎ 0525 718181.



Here's an example of Cinema 4D 2.0's fractal landscape generator – the water is a bumpmapped plane.

CD Boom

One the areas of computing which had plenty of support at the show was CD-ROMs. There are loads of fantastic CD-ROMs coming out of Germany very soon. I'll just mention one or two them.

The first I noticed was the Imagine Enhancer CD, this has loads of objects, fonts, textures, bump maps and backdrops. Amiga Raytracing 1 and 2 (£19.99 each) are two volumes that provide similar files, but for other programs as well as Imagine, such as Lightwave, Sculpt, Caligari, Real 3D 2.0 and Maxon Cinema.

Other disks at the show included several new utilities collections, image CDs, and animation collections. Although not from Germany, there were also several other interesting CD's on show there was a LightWave disc (£39.99) and a couple of photographic collections. We will be reviewing some of these CD-ROMs next issue, if you just can't wait to get hold of one the CDs mentioned call PD Soft on ☎ 0702 466933.

Cyberstorm

Phase 5 had their new CyberStorm 060 accelerator fro the A4000 on show and what an impressive piece of kit it proved to be. Although not in full production at the moment, due to difficulties in getting hold of 060 chips, a pre-production model was being put through its paces.

The board was apparently running at 82,190 mips compared with the standard A4000 040's 15,447. In more practical tests the board produce some incredible results. The texture examples scene supplied with LightWave took 54 seconds compared with the A4000 040's 3 mins 42 seconds. An Imagine 2 animation which took a A4000 10mins 34secs only took 2mins 45secs.

UK prices and distributors have not been announced yet, but if you want to find out more call Phase 5 on ☎ 01049 69 5481844.

BUYING FROM ABROAD

If you are planning to buy any overseas products, please consult the buying advice section on page 97.

Buying programs or equipment from abroad is easy, but there are a few simple guidelines you should follow. The best way to pay is by credit card, as any currency exchange will be handled by the credit card company.

Alternatively, you can have money transferred directly from your account to the companies, although some banks will charge for this service.

If you are buying from a European country, most banks will be able to supply you with a Eurocheque, which can be paid into any European bank.

You should also make sure that you check that delivery charges are included in the price.



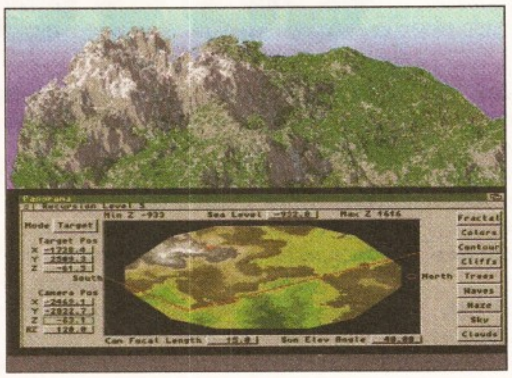
Stateside Snippets

Find out what's going on across the pond. R Shamms Mortier reports on the latest Amiga news from the US.

TEXTURE MAPPING OBSESSION

If you are an obsessive texture mapper and have a CD-ROM, don't miss getting the "moving textures" CD from Precision Computer Graphics. I absolutely love it! On board are actual stop motion animation frames of clouds, water, flames and more as well as a collection of awesome effects maps.

I used these beauties in both Aladdin-4D and LightWave animations, and the results were startling. In one Aladdin animation, I wrapped animated clouds on a sphere, and then had the camera fly into it to observe other 3D objects in motion. From the outside, the sphere became a planet with clouds whipping around it like a mega storm, while from the inside I had a moving cloud backdrop for the action. Don't miss getting this one! MSLP $249.00. **Precision Computer Graphics ☎ 0101 (818) 842-6542.**

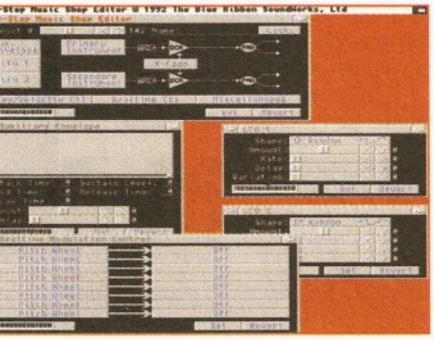


One Stop Music

I own a great MIDI music program called "Sequel" from Diemer Development. The software does everything but cook breakfast, but one thing it didn't do was to address the One-Stop-Music-Shop card from Blue Ribbon Soundworks.

The One-Stop is literally a music synth on a card, so addressing it internally from various MIDI packages is almost a must for me. Blue Ribbon provides a separate program called "Loop Back" that usually does the trick, but Loop Back just hung Sequel up, requiring a reboot.

I called Rich Diemer of Diemer Development and told him of the problem, and he had a back-and-forth with the techie at Blue Ribbon. The result? Well, all of you Sequel/One-Stop users should see a revision of Sequel coming out later this year that fixes the problem. It seems the problem was the priority settings of Sequel compared to those required by the One Stop. **Blue Ribbon Sound Works ☎ 0101 (404) 315-0212. Diemer Development ☎ 0101 (818) 762-0804.**



The One-Stop-Music-Shop from Blue Ribbon Soundworks.

NEW LANDSCAPES

Panorama 4.0, a great landscape generator for the Amiga, is shipping.

It offers a host of new features including AGA support, new dithering routines that add realistic detail, super close zooming, extensive frame buffer support, forest/trees, ARexx, and a great new DEM Converter program that allows you to get DEMs (Digital Elevation Models) directly from the nets for Panorama manipulation and rendering.

New program price is $99.95, but registered owners of previous versions may upgrade for only $25.00 (plus $4.00 shipping).

MAC TRUTH

I have an EMPLANT MAC emulator from Utilities Unlimited. I purchased it mainly so I could run Elastic Reality, the best morphing software available (from the former Amiga software company ASDG... which is newly named Elastic Reality). There is some nice MAC software in addition to this package, but you know what... most Amiga videographic and 3D animation software is a thousand times better, more intuitive, and far less expensive. This is a cold hard fact that will become more apparent as the Amiga comes back on line.

A DIFFERENT WARP

At the time of writing, I am BETA testing the fabled Warp System boards from U.S. Cybernetica. They are no fable. Aladdin-4D has been rewritten to address them from the ground up, and Aladdin-4D.Warp runs at about twice the speed with each module.

I am testing out two modules in parallel which means Aladdin is rendering at 300% of its normal Amiga 4000 speed.

Soon, I'll have a later issue of the boards with more modules. When I feel that I am satisfied that marketing is immanent, I will write an exhaustive piece on these new parallel processors that look to give the NewTek Raptor some competition.

Right now, the system is INMOS Chip based, but the future will see another Warp configuration that will blow your socks off (guaranteed!).

By the way, don't confuse the "Warp System" from U.S. Cybernetics with the "Warp" boards from MacroSystems – they're two different animals. **U.S. Cybernetics ☎ 0101 (800) 292-5001.**

CD-ROM News

Looking for more Amiga CD-ROMs to add to your collection? Here are some possibilities. Legendary Technologies has one called "Sound Ideas" that has 300 soundfiles (in both stereo and mono modes).

Complete descriptions are included, as are Windows versions. Standard CD modes allow you to hear the soundfiles on normal CD playback. Price is $39.95. The same company puts out a four volume set of CD-ROM graphics for texture mapping and backgrounds at $39.95 per volume or $129.95 for the set. **Legendary Technologies ☎ 0101 (519) 753-6120**

Strange Letter, considering...

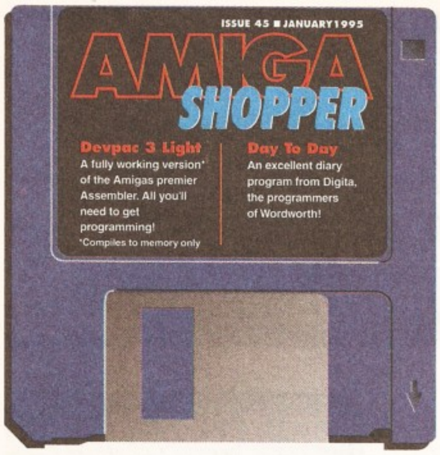
The Service Management Group (SMG) was supposed to take over Commodore's service program. When Big C went under, my phone call to SMG for support gathered no help – in fact they were quite rude. It was surprising, then, that I received a letter from them some weeks later telling me about their wonderful services.

Does the left hand know what the right one is doing?

Soft Clips

Two companies that have the word "Soft" in their names have some clipart you might really enjoy. The first is Soft-Logik, the developers of PageStream. They have two disk collections that will sell for $30.00 each.

One is a compendium of Amiga computers and peripherals in beautiful gray scale, and the other is "Flags of the World". The other volume is from SoftWood (developers of Final Writer). They have a 3-disk set of 75 full colour images for the holidays. The whole set is priced at only $25.00. **Soft-Logik Publishing Corp. ☎ 0101 (800) 829-8608. Softwood, Inc. ☎ (800) 247-8330.**



On this month's coverdisk: Hisoft's DevPac Lite Assembler and the full Kickstart 2.04 Include files.

Use Your Coverdisk

On this month's coverdisk we have a special treat, courtesy of HiSoft and Commodore, especially for those of you who are following our Assembler course, or are interested in learning how to program your Amiga in Assembly Language. DevPac Lite is a fully working Assembler for the Amiga, complete with Debugger.

If you're interested in buying the full product, then contact HiSoft on ☎ 01525 718181. DevPac 3 currently retails for £69.95 and comes complete with the all important Include files (see below), and does not have any of the restrictions of DevPac Lite. That's not to say that we have missed out on these Include files ourselves – Commodore have allowed us to distribute the older 2.04 Includes with this coverdisk too!

The 2.04 Includes work with all Kickstarts available currently, from 1.2 upwards. They include information for ROMs up to 2.04, so you can't use any 3.0 new features without buying the latest 3.1 Includes from Commodore, but you will be able to follow the Assembly Language course.

To make it really easy to install, we've knocked up a small Installer script which uses Commodore's excellent installer program. Users without a hard drive don't miss out, DevPac lite can also be installed to a floppy disk. To do this you'll need a blank formatted disk at the ready (call it something sensible like "DevPac Lite") – and when the installation program asks you where you wish to install DevPac Lite to, simply put in your blank disk and chose it as the drive to install it to.

I will just say, though that if you are serious about using your Amiga for programming, you really ought to consider a hard drive, they are quite cheap now for all of the Amiga range.

Using the installer is a breeze. Put the cover disk into df0:, double click on the drive icon, and then double click on the Install DevPac Lite icon. Then follow on-screen instructions. Don't be alarmed that the Novice user gadget on the Installer is ghosted out. This is to prevent Installer from making some important decisions for you, which you should make yourself, such as where the Includes are to go, for example.

The Installation process creates a drawer called "DevPac Lite". Inside this drawer is the DevPac program itself, which can be started by double clicking on it. You are then ready to type in your first Assembly Language program and get it working! Alternatively, you can cheat just to check it all works, and use one of ours.

As part of the Installation, a drawer called "Examples" is created. This contains the file, "hello.asm". This is the program we'll write in this months Assembly Language Tutorial. The program simply shows "Hello world!" on the screen. Also in the Examples drawer is a pre-assembled version of the program ready to run from a CLI or Shell window. It is called "hello.x". You can't create disk-based executables with DevPac Lite, you'll have to buy the full version for that (see above).

NOTES ON INSTALLATION FOR KICKSTART 2.04 USERS AND ABOVE

DevPac Lite works on Amigas with 2.04 and above. When you start the Installation process you will be asked which version of the program you would like to install, choose the "2.04 +" option. This works with all OSs above 2.04, right up to and including Kickstart and Workbench 3.1. Don't install the 1.3 version, as it is not as powerful for you.

NOTES ON INSTALLATION FOR KICKSTART 1.2 USERS AND ABOVE

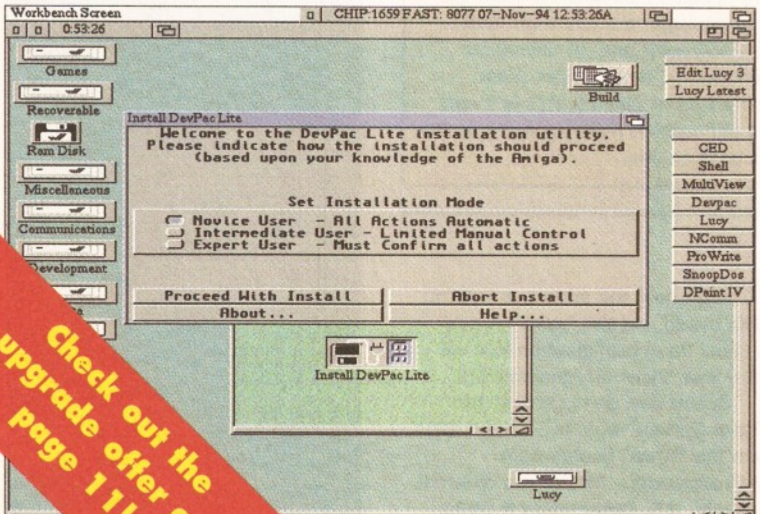
The first suggestion I would give is to upgrade to 2.04 (at *least*!) and then look at the notes for Kickstart 2.04 users instead! Seriously, 2.04 is dramatically better than 1.2 or 1.3, and it is worth the upgrade if you use your Amiga for anything other than games at all.

Some major applications require at least 2.04 now, so you are missing out. Upgrading to 2.04 should be quite cheap now, but it's worth stretching to 3.1 which costs around £80 currently. 3.1 will work in all Amigas including the A500 (and indeed the A1000 if you have a Kickstart ROM board of some sort) and gives you a whole host of new stuff to play with, and it's a bunch more reliable than 1.3 also.

So, upgrade! Please!

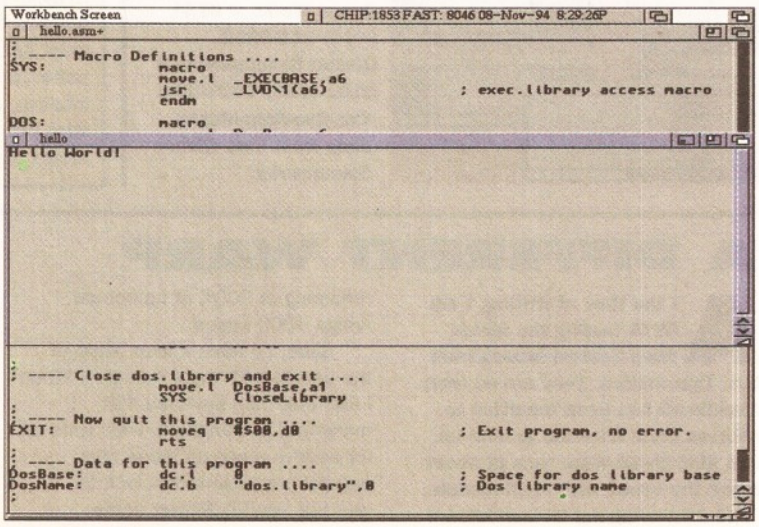
However, should you not wish to move your Amiga kicking and screaming into the 90s then you can still use DevPac Lite. When you start the Installation process, you will be asked which version of the program you would like to Install. Choose the "1.2/1.3" option.

Do *not* choose the "2.04+" option which



Check out the upgrade offer on page 11!

The Installation process in Action.



My first program!

INCLUDING THE INCLUDES

We've also managed to squeeze the complete Commodore Includes (version 2.04) on to this month's coverdisk. The Includes are short bits of code which tell your program how to access varioius parts of the machine.

For instance, if you wanted to carry out an operation on the parallel port, you would have to bring the device include "parallel.i" into your program. For more details on how to use these, see Toby Simpson's Assembler tutorial, which begins on page 96 for more details.

Due to space restrictions, we have had to archive them, so they won't be installed by the DevPac Lite installation procedure.

To get at the Includes, simply double click on the "Extract_Includes" icon and they will be decompressed to your RAM disk. You can then drag the drawer containing the include files whever you want.

In order to use the Includes, you will also need to carry out one further step: setting up an assign to the right directory.

So, if you have put the Includes on to a disk called "Stuff", add the following line to your user-startup or startup-sequence:

```
ASSIGN INC: STUFF:Includes
```

THE LIMITATIONS OF DEVPAC LITE

- Programs are limited to around 2000 lines of code
- Programs can only be compiled to memory. Stand alone executables cannot be saved to disk.

will not work on your Amiga.

FIRING IT UP AND CHECKING IT OUT

Once you have installed DevPac Lite, you should be ready to fire it up and give it a spin. Double click on the "DevPac" icon. When DevPac Lite has loaded, select "Open.." from the "Project" menu. Choose the "hello.asm" program from the Examples drawer.

When the program has loaded, select "Assemble" from the "Program" menu. Assuming all goes well, DevPac will perform its magic and turn the Assembly Language in the Machine Code which the 68000 processor inside your Amiga can run. Now select "Run" from the "Program" menu, and all being well you should get the results shown in Picture 3. Now you're ready to rock and roll, so turn to this month's Assembler Tutorial to find out what the program does.

SO, WHAT'S ALL THIS ABOUT THEN?

From the moment you switch your Amiga on, to the moment you switch it off, it performs potentially millions of very simple operations every second. The heart of all of this work is the MicroProcessor, a computer on a Chip. In the Amiga, the MicroProcessor is made by a company called Motorola, and belongs to the 68000 series of chips. The 68000 series has been around now for 15 odd years, and significant advancements have been made in that time, particularly in speed and price.

The most modern Chip in the series, the 68060, is over 50 times faster than the simple 68000 Chip found in unexpanded A500s, A600s. and A2000s. Although no Amigas are available with 68060s yet .

Lots of numbers – very confusing. This just about sums up programming computers, particularly in Assembly Language. So, what *is* this Assembly Language then? Let's take a brief step away and come back to it in a while. You'll recall that in the previous paragraph we said that the MicroProcessor performs maybe millions of simple operations per second. Just how many of these operations depends on which version of the 68000 Chip you have in your Amiga.

A standard unexpanded A500 will manage about 0.8 millions of operations per second. An A4000/040 will peak at 21 million operations per second. A1200 owners move along at about 2.5 million operations per second.

OK, so enough of all these numbers. What exactly are these operations? They are very simple indeed, they consist of things like basic arithmetic operations (add, subtract and so forth), and moving information around inside your computers memory. Each of these operations is a single machine code instruction.

Machine code is the lowest level of programming you can perform, it involves specifying exactly which operations are performed by the MicroProcessor, and when. You have complete control.

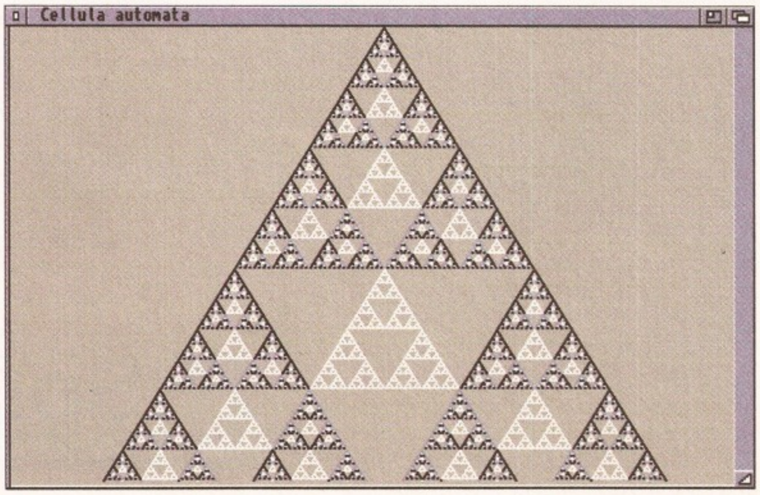
Machine code has another property – it's totally impractical to program in. Machine code consists of numbers, and lots of them. There is a number code for each instruction, and then more numbers depending on the operation which is to be performed (if you want to add 1 to the contents of one memory location inside your computer, you have to specify the 1 and to where it is to be added).

The net result of all this is that no-one programs in machine code any more, machine code is for the days where programming computers involved flicking switches, rotating dials, and pressing small buttons and then viewing the results on a panel of little red lights. Thankfully, these times have passed.

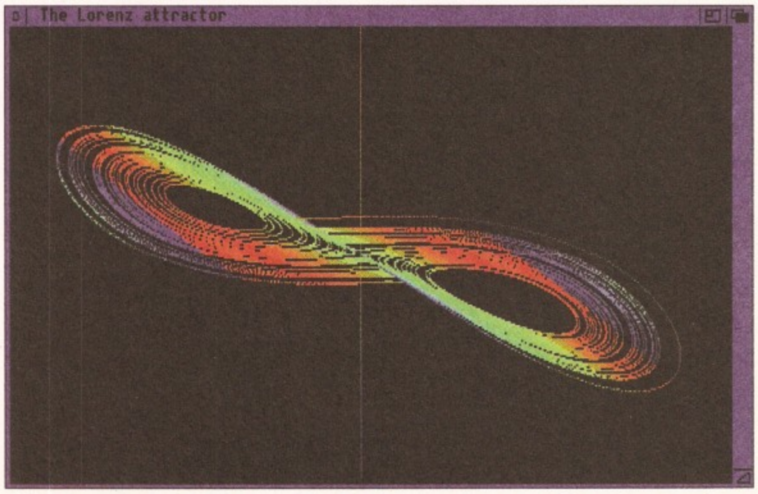
Assembly Language gives you the advantages of programming in machine code, without a lot of the hassles. Instead of having to specify the number for each operation, you can call it by a name. The Assembler then does the hard work of converting your Assembly Language program (called the Source Code) to a machine code program which can be ran by the Microprocessor (the Object Code).

The thing about Assembly Language, is that you have total control. You know exactly which operations are going to be performed by the Microprocessor, because you specified them. For every Assembly Language instruction specified, one machine code instruction is generated.

This differs from higher level languages such as 'C'. In 'C', you are separated from the complexities of machine code and Assembly Language. You program in a language which is far easier to understand, read, and fix when things



As an extra added bonus, we've put a couple of good PD programs on the coverdisk, including this program which calaculates cellular automata.



With the source code for producing Lorenz attractors, such as the one above, on the coverdisk, you can learn the black and dubious art of programming...



the *squirrel can suss it* … can you?

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We're about to release an exciting new hardware product for the A1200 and A600 computers … but we're not going to tell you about it until next month.

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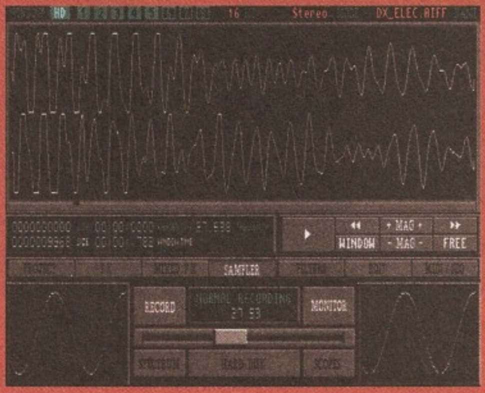
Another exciting new Amiga product from

HiSoft
High Quality Software

Competition draw will take place at the World of Amiga Show at Wembley on 10 December. Competition not open to HiSoft employees or their friends or relatives.

AURA

Aura is a brilliant new concept in high-performance, yet affordable sound sampling for your Amiga A600 or A1200 computer. This breakthrough is brought about by revolutionary hardware which plugs into the PCMCIA slot to achieve extraordinary sampling performance in glorious 12-bit stereo, with optional direct-to-disk recording.



A screenshot of the powerful sample editing suite contained within Aura

The Hardware

- Achieves a signal-to-noise ratio of 72db - equivalent to expensive 16-bit systems.
- PCMCIA credit card connection for maximum performance and expandability.
- Quality phono outputs with Amiga audio mixed
- Very high sample record playback speeds.

The Software

The Aura audio/sampling suite is probably the world's most powerful, flexible and easiest-to-use Amiga sound software package to date! This is no idle claim, just look at some of the features of this superb sound sampler:

- Record/Play/Edit 16- or 8-bit, mono or stereo sounds to memory or direct-to-disk.
- Real-time monitor of input with moving spectrum analyser and oscilloscope.
- Amazing range of editing facilities include cut, paste, insert, delete, fade and volume. Editing controls work on both samples in memory and on hard disk.
- Record samples into memory at rates in excess of 60 kHz (A1200, 12-bit stereo) and direct-to-hard disk recording at rates in excess of 40kHz (A1200 12-bit stereo with fast RAM).
- 15 fully programmable, single source sound effects can be used in real-time and on samples held in memory or even on hard disk, plus effect preview.
- Block-oriented Sample Sequencer built in.
- Advanced digital filtering with 3-dimensional Fast Fourier Transform interactive display.
- Real-time playback of samples under MIDI control (requires extra MIDI interface & keyboard
- Load and save IFF, RAW and AIFF sample formats.
- Over 60 fully programmable, *multi-source*, sound effects on samples in memory, in real-time and to memory or hard disk (with effect preview); a unique feature.

Octamed Compatible

Octamed is the leading Amiga sample sequencer; now, version 5.02 and above include a dedicated 16-bit sample editor which is 100% Aura compatible and can play 16-bit samples through the Aura hardware while sequencing MIDI and normal Amiga 8-bit sounds.

This powerful combination provides stunning performance and sound quality for maximum impact.

Audible Reality

Package includes: Aura hardware, complete software, comprehensive 148-page manual, stereo phono-to-phono lead and registration card.

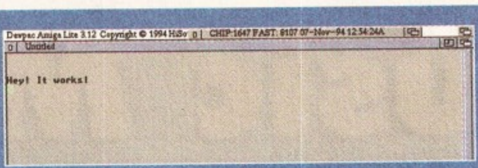
Aura costs only £99.95 inclusive and is available from all good computer shops … now. Alternatively, phone our order line on 01525 718181, armed with your credit/debit card.

Aura is another quality music product for your Amiga from HiSoft/Microdeal

HiSoft
High Quality Software

The Old School, Greenfield
Bedford MK45 5DE UK
Tel: +44 (0) 1525 718181
Fax: +44 (0) 1525 713716

> *"Assembly Language... do not delay – try it today."*



All installed and running.

go wrong. The catch? For every *one* C instruction, potentially tens or even hundreds of machine code operations could be generated. A program called a Compiler is responsible for converting source code for a language such as 'C' into machine code which can be ran by the Microprocessor.

So why bother? It is obvious that high level languages such as 'C' are far easier to learn, program, and so forth. You need to ask yourself this. Assembly Language programming has its advantages and disadvantages.

ADVANTAGES

You have complete control. Because of this, you can write very clever programs that are fast, and very efficient. It is not easily possible to achieve this in higher level languages.

It is also very interesting – you will learn a lot about your computer by playing with this sort of programming, which will help you in a number of instances.

DISADVANTAGES

It is hard to learn! It is also considerably harder to fix things when it all goes dramatically wrong. High level languages are better at spotting fatal errors and problems, and also prevent you from doing certain things. Assembly Language programming has none of this – you can write a two line program to crash your Amiga quite by accident. You will certainly need at least a tad of patience!

It certainly looks gloomy for potential Assembly Language programmers, but don't let any of the disadvantages put you off. It can be immensely rewarding, and you will learn an awful lot about how your computer works, but just keep it in perspective. In these modern days, compilers are getting cleverer and cleverer – the machine code that they generate is much more efficient than it used to be.

As Microprocessors continue to get more complex, it is likely that, in the next few years, compilers will be able to generate better machine code than any human programmer could economically create, simply because they know the rules better. (Indeed this is already the case for some of the more complicated processors available today.) If you're thinking of programming big Amiga programs with windows, buttons et al, then you ought to be looking at 'C'. This is not to say that you can't write such applications in Assembly Language – you can, only it will take twice as long and be a pain to get working.

If you're out to learn much more about the way your computer works (indeed, how *any* computer works), and perform some pretty tricks, then you won't be disappointed with Assembly Language programming. So, do not delay – try it today (as they say on TV, apparently!).

DAY TO DAY

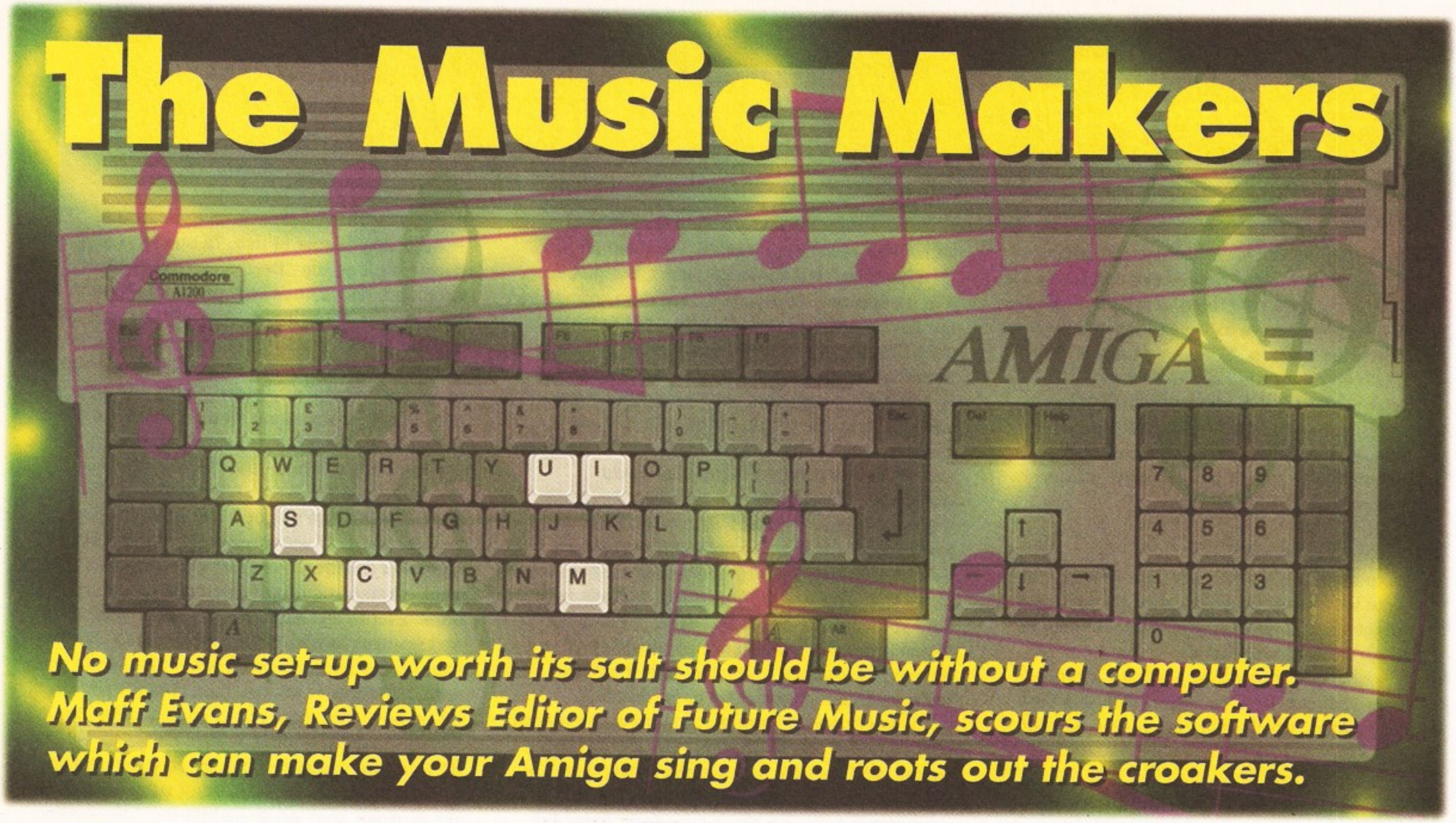
Day By Day is a rather cool diary utility, brought to you courtesy of those nice chaps at Digita. It will allow you to keep track of important events in your life (such as birthdays, paydays, the anniversary of the battle of Jutland, etc) and make sure you never miss them again. Day By Day can keep track of all of these, and give you plenty of warning.

It's very simple to use. To start the program, double click on the "DayByDay" Icon. This will bring up a new screen with some information on the program. Pressing any key will take you onto another screen where you can enter the date. If your machine has a real time clock fitted, the date should already be displayed. If not, just type the date in and press return. You'll then be dropped straight into the list of urgent things to do. As you can see, It's all a a bit pointless as the world is due to end on the 31st of December 1999, but don't worry as we've got a few years to go yet.

Pressing 'E' will take you onto the main screen of the program. From here, you can check what outstanding events you have or set up new ones. Events can be held in different categories, and we have already set up three categories for you. For instance, to check when the next issue of Amiga Shopper is on sale, just press 3 and you'll be dropped into a list of the on sale dates for the worlds most fab serious Amiga magazine. Setting up your own categories can be done by pressing C.

There are also various other useful things in the program such as an instant monthly planner, so you can quickly check what day a certain date is on. You can also search through all of your outstanding events for a name or phrase by pressing 'S'.

We don't have space to document all of the functions in this program, but most of them are pretty easy to understand by simply trying them. Don't be afraid to experiment, and don't forget to check out our special offer to upgrade to the Digita home office pack on page 52. AS



The Music Makers

No music set-up worth its salt should be without a computer. Maff Evans, Reviews Editor of Future Music, scours the software which can make your Amiga sing and roots out the croakers.

Some people reckon that music made using electronic instruments and computers isn't 'real'. Well I say "So what?" If it sounds good and it enables people to express musical ideas in an entertaining, moving or fun way, what's the problem?

The music business doesn't seem to find this kind of criticism a problem anyway, with most (in fact almost all) studios having some kind of computer controlling the instruments, recording equipment and effects boxes. The advent of computer-based music has also made it possible for people to make music in their own homes (heralding the birth of the 'bedroom techno' scene). Anyone with a simple synth and a computer can make great sounding music (and in some cases just a computer).

The range of software for creating sounds, writing songs and controlling studio equipment is pretty extensive, so here's a run-down of the main programs available for your Amiga.

SEQUENCERS

At the heart of any MIDI music system there will be a sequencer. This is a program which enables you to record, edit, arrange and play back complete songs. A sequencer works pretty much like a multi-track tape recorder, except that instead of recording sounds on individual tracks you just record the data for playing individual notes. This data can then be edited – correcting missed notes, changing sounds, altering timing, copying and pasting sections and a lot of other tricks.

Using a sequencer has a number of benefits over using tape. For a start you can change the tempo of a song without altering the pitch and you can even play tunes on totally different instruments – something impossible when you've recorded a performance to tape. But which one do

SO WHAT'S A SUPERTEST?

Every month, we take a certain aspect of Amiga use and review and rate every program or product in that area that we can get our hands on. In this issue, we are taking a long hard look at music programs, including MIDI sequencers and programs which use the Amiga's powerful sound chip.

Over the next few months we will be looking at modems, printers, programming languages and a wide range of other subjects. In the meantikme, here's a quick guide to what's in this month's Supertest:

SEQUENCERS	**12**
TRACKERS	**15**
AUTO COMPOSITION	**16**
PATCH EDITORS/ LIBRARY PROGRAMS	**16**
SAMPLERS	**16**

JARGON BUSTER

Aftertouch – a number representing the pressure applied to a note after it was initially struck.

Continuous controllers – these are streams of MIDI data which affect sounds as they are played. CC messages can be for pitch bend, aftertouch, volume and so on – anything that isn't just a one-off event.

MIDI – Musical Instrument Digital Interface. The language that computers and electronic music equipment use to communicate with each other.

Multitimbral – the ability to play more than one sound using separate MIDI channels on one piece of equipment.

Piano roll – a grid-based editing system using bars next to a piano keyboard. Similar in style to the sheets used to control a player piano.

Pitch bend – when the pitch of a note is raised or lowered as it plays, causing the note to slide or bend.

Polyphony – the number of notes that can be played at once on an instrument.

Program changes – these are MIDI messages used to call up new instrument sounds on a particular channel.

Realtime – a method of control or editing which is carried out as it happens, rather than manipulating static data.

Sequencer – a program used for recording, playing back and editing MIDI songs. They usually work like multi-track tape recorders, except that you don't actually record sound, just the data for playing back notes.

SysEx – MIDI data storing the parameters required for a synthesizer to create sounds. This is specific to each machine, hence the name 'SYStem EXclusive'.

Step-time – a way of recording where notes are entered in sequence, one at a time.

Transport – the mechanics and controls on a tape recorder for controlling the playing, recording and winding of a tape. Most sequencers emulate these controls.

Velocity – a number representing how hard a note was struck.

you choose? Well here are seven of the main sequencing packages available for the Amiga.

MUSIC-X 2.0

£149.99 – Software Business ☎ 0223 576186

Although its current incarnation is the latest sequencing package to hit the market, Music-X is the most popular sequencer on the Amiga. The reasons for this are obvious – it's an extremely flexible package capable of professional results and it's very easy to use.

Recording performances doesn't take much figuring out thanks to the logical tape recorder-style controls and sensible track organisation and editing sequences using the intuitive grid-based editor is a cinch. The ability to string sequences together to build up complete songs (becoming more pattern-based) makes it even more flexible. You just write short patterns for the various parts and then put them together in a controller sequence. It could hardly be easier.

Even when you've recorded or created your sequence you can use Music-X's extensive tools to manipulate or edit tracks. These are accessed as 'modules' and provide quick, easy control panels for editing large amounts of data, including altering velocities, quantising (to a varying degree) and even adding 'swing' to inject a little human groove to the piece.

Another important factor in the success of Music-X (especially version two) is the comprehensive support of internal samples. Up to 64 can be held at any time (depending on memory) and called up as programs as you would on a MIDI synth. The sounds themselves can also have their envelopes altered, drastically changing, if you wish, the characteristics of a sound, and when used in a sequence they respond to velocity (higher velocities increasing the volume of a sample).

Perhaps the most significant point about the new version is the inclusion of Notator-X, a full score-editing and printing package which is also available separately as a stand alone program. This is a pretty advanced score-writing DTP package, which enables you not only to organise sequences and print them out as scores but also carry out a wide range of specific edits to a track (you could even create an entire track just using Notator-X). The only hindrance is that you can't play files back directly, but you can transfer data between Notator-X and Music-X, so you've got the best of both worlds really.

Music-X 2.0 isn't without its little foibles. Editing continuous controllers (such as pitch bend or aftertouch) is a bit of a pain, since you can't draw curves to add new data. If you want to do that on screen you have to add each even in turn. Very time consuming. Despite this setback, Music-X 2.0 is an accomplished, flexible and easy to use sequencer. No wonder so many people choose to use it.

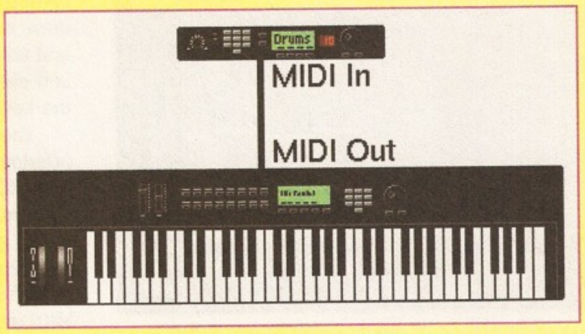
Rating: 85%

MIDI BASICS

Although it seems a very complex area, MIDI is quite simple to understand once you grasp a few basic rules and principles. First, an explanation of what MIDI is.

MIDI is a language which keyboards, sequencers, synthesizers, samplers and other music equipment use to communicate with each other. MIDI data is a series of numbers transmitted over 16 channels (like TV channels). The data can be notes, messages to call up new sounds or add expression to a note (such as bending the pitch or adding 'aftertouch'). Individual channels are usually used to play different instruments (or a selection of sounds in a multitimbral instrument).

There are a number of other things which can be carried out using MIDI, but these tend to be learnt as you experiment with connecting equipment and using sequencers. For now let's look at a few basic MIDI set-ups.

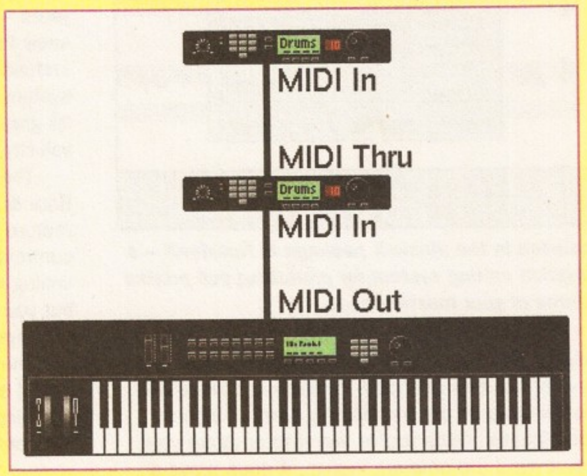


BASIC SET-UP

This is the most basic MIDI configuration, with a MIDI controller (in this case a keyboard) playing the sounds from a sound module. This simply involves connecting a MIDI cable from the Out socket of the controller to the In socket of the sound module.

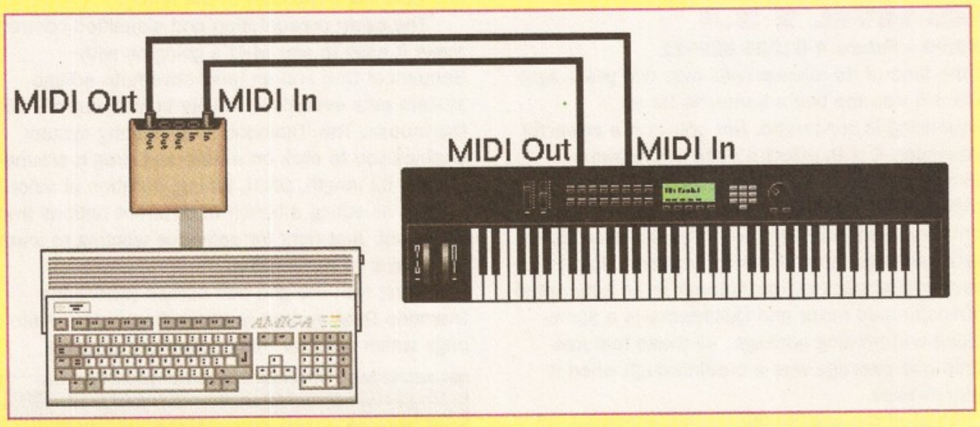
SEQUENCER SET-UP

To connect a MIDI synth to a sequencer running on your Amiga, you'll need a MIDI interface (which start at around £15-£20). Connect the Out of the interface to the In of the synth (in the same way as the basic set-up) and the Out from the keyboard to the In of the interface. This enables you to play sounds on the keyboard from your sequencer and record performances played on the keyboard into sequences. Some programs have a 'soft thru' feature, which makes the Out socket from the Amiga act like a MIDI Thru socket. If this is the case, you need to turn local control



DAISY-CHAIN SET-UP

You can control further units from the same controller using a 'daisy-chain' system. This involves taking a lead from the MIDI Thru socket of the first module and connecting it to the MIDI In of a subsequent device. A MIDI Thru socket simply echoes the data received at the In socket.



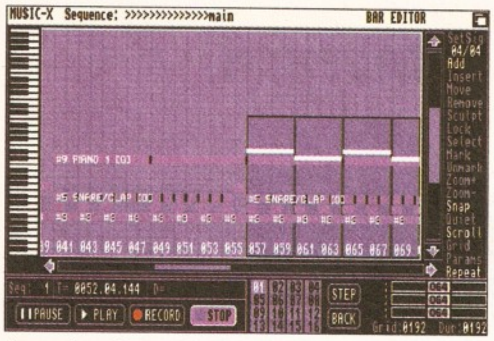
BARS AND PIPES PRO 2.5

£199.95 – Emerald Creative ☎ 0181 715 8866

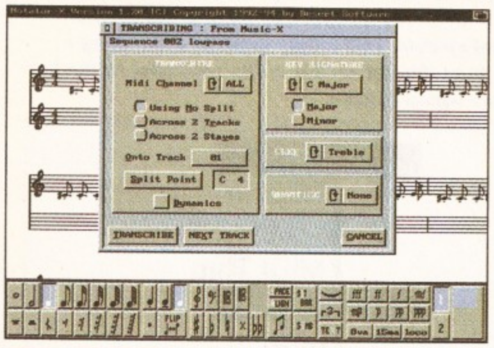
The buzz word (well one of them) of the moment is 'multimedia'. The ability to play music, animation, video and graphics from a single machine is still a source of wonder for many people. Bars and Pipes Pro 2.5 is a sequencing package with feet planted in both the serious MIDI-user market and the world of multimedia.

Using B&P Pro, you can play MIDI sequencers and link up with animation, video, graphics and sound effects using a special utility called Media Madness. This triggers external events directly from a window within B&P, so you don't even have to have another program running to create multimedia shows. For added flexibility, you can also link up to Arexx to send commands to other programs on your Amiga. Slide shows will never look the same again.

The actual musical portion (well the majority of the program, in fact) of B&P is a little unusual. Not only can you record and edit sequences on a grid-based screen, you can also add a massive array of MIDI effects using the 'pipeline' system. This involves dropping special tools onto a graphical pipe either before or after a sequence track. These can carry out a bewildering array of MIDI effects, such as transposing pitch, adding echo, creating automatic arpeggiation (Phillip Glass, eat your heart out), add echoes and... Well the list is almost endless. You can even create your own custom tools and store them for later use.



Arranging pieces of music using Music-X 2.0 is simple thanks to the intuitive and flexible Play Sequence system.



Included in the Music-X package is Notator-X – a notation editing system for producing pull printed scores of your masterpieces.

Although very powerful, B&P Pro isn't the most intuitive of sequencers. The graphical system uses several pointers and icons to carry out tasks and the result is an often confusing cram of colours and pictures. Once you've learnt to navigate your way around the program though, it does prove a very powerful package. There's nothing else out there which gives you as much control over multimedia triggers (well any at all, in fact), so should be the choice for those working in the production of musical presentations rather than just recording.

Rating: 80%

KCS LEVEL 2 3.5

£69.99 – Future ☎ 01225 822511

At the time of its release (well over two years ago) KCS 3.5 was the bee's knees as far as sequencing is concerned. Not only is it a powerful sequencer, it is in effect a suite of programs running under one environment – the MPE (Multi Program Environment). KCS (or Keyboard Controlled Sequencer to give it its full name) is the overall arranger and controller program, Tiger is the graphical track editor, Automix is an automated MIDI-controlled mixer and Quickscore is a score-editing and printing package. All these features within one package was a breakthrough when it was released.

Most of the work in the system is carried out in KCS itself. This is where all the tracks are stored (and recorded) ready for playback of the overall performance. As the name suggests, all the instructions are either carried out on your Amiga's keyboard or triggered using an external MIDI keyboard. This includes moving, accessing, copying and deleting sequences, using a main sequencer to trigger other tracks and editing sequences as event lists. Although very powerful, this isn't the most intuitive method of working – hence the inclusion of Tiger.

Tiger displays sequences in a graphical form using a piano-roll type grid. Here all edits are carried out using the mouse. You can cut, copy, draw, edit and delete notes by selecting an option and using the mouse pointer. This is a lot faster and easy to understand than using just text and the keyboard.

The mixer section is very comprehensive, offering control over mixing channels in realtime (via MIDI). You can move faders on a graphical representation of a mixing desk, mute channels, select groups for overall mixer effects and store all this information as part of your sequencer. The mix effects can then be relayed to an automated MIDI mixer, so all your mixes, fades and drop-ins are controlled directly from your sequence. The same effects can be carried out on other programs just using controller messages, but having it all laid out like a mixer in the first place makes things simpler.

Although very powerful for its time, KCS hasn't undergone any radical changes over the past few years – just the odd tweak – and it's starting to show its age. The main KCS system looks a bit archaic next to some packages and the Tiger system can be confusing to begin with thanks to its graphical representations of data (with tails for velocity, small icons and, at times, unclear controls).

The Automix section is still interesting, as only Bars & Pipes is the only other sequencer to feature a mixer page at all (although B&P's version controls MIDI sequences directly rather than linking to an external mixer). The Quickscore is OK, but you only have control over the way scores are displayed and printed rather than being able to edit the score directly, which is a bit limiting. KCS is still a pretty powerful system, but it needs updating to bring it in line with more modern programs – not least in terms of ease of use.

Rating: 75%

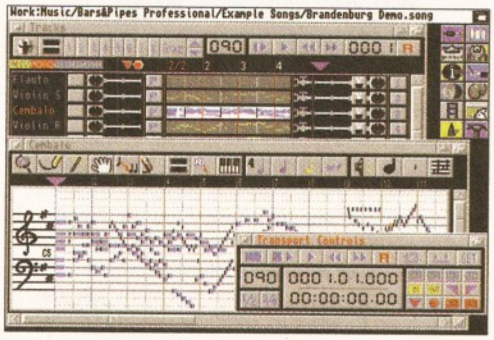
SEQUENCER ONE PLUS

£59 – Software Technology ☎ 0161 236 2515

Designed as a low-cost, entry-level sequencer, Sequencer One Plus is aimed at the beginner who would like to create professional-sounding results without having to wade through pages of manuals and pawning a member of the family.

The clean presentation and simplified controls make it easy to see what's going on with Sequencer One and an innovative note editing system puts everything in your control directly from the mouse. The 'Diamond Drag' editing system enables you to click on a note and drag it around to alter its length, pitch, timing, duration or velocity without selecting a bunch of different options from the panel. Just right for someone wanting to learn the basics of sequencing.

Along with the grid edit screen (where the Diamond Drag system is used) there's the main page which controls track selection, playback,



Windows galore! This shows the flexible (but sometimes confusing) display system used by the multimedia-ready Bars and Pipes Pro.

recording, setting cue points and other overall management functions. This is mainly text-based, with lists for cue points and tracks sitting above tape recorder-style transport controls. In addition to this are pages for arranging the song as a series of bar-length blocks for each track and a 'tempo track', which enables you to draw lines on a grid for altering the tempo as a song plays (either as direct changes or gradual alterations

> **"Using a sequencer has many benefits over tape – you can change the tempo of a song without altering the pitch and you can even play tunes on totally different instruments."**

using a number of preset curves – quite an advanced feature for a sequencer at this level.

The flipside of this simplified approach is the flexibility of the system. Once you've learnt the basics of sequencing and put together some music of your own, you'll start to find that you want to carry out edits in a way that Sequencer One Plus can't handle. For a start the step-time recording mode is a little ropy and the bar-edit screen is nowhere near as flexible as the arrange system found in Music-X. For this reason, Sequencer One Plus is only recommended as a learning program for the cash-strapped beginner. You will learn a lot from the system, but it's very unlikely that this will be your main sequencer for very long.

Rating: 70%

TIGER CUB

£59.95 – Key Audio ☎ 01245 344001

This is a stand-alone version of the graphical sequencer section of KCS. The editing system is pretty much the same, with edits being carried out on a piano-roll grid using the mouse. The events appear as horizontal bars (showing the duration) with vertical lines to represent the velocity. Notes can be dragged around to alter pitch, duration, timing or velocity (depending on which option is selected) just using the mouse.

At the bottom of the screen a window can be displayed showing continuous controller information. Using the left and right mouse buttons, you can draw new curves or edit those already there – using cut and paste options to move the data around. A 'conductor track' can also be called up to add new time signatures or enter tempo changes.

The way in that the Cub version differs from the version included with KCS is that there is also a 'tape recorder' screen. This is where you play back the assembled tracks, record new ones, set the MIDI channels and names for tracks and perform the main filing operations (all the functions that would normally be handled by the main KCS program). You can still use Cub as part of the MPE (mentioned in the KCS review), so that you can bolt on the extra programs if you wish.

The problem with Tiger Cub is that it's just too fiddly to get anything worthwhile out of the

program. The graphical representations are sometimes unclear and the fact that you have to select different operations in order to move the note in different directions or change its characteristics in some way is extremely frustrating. It forces you to work in an extremely meticulous way, which takes a lot of the fluidity and intuition out of the musical process – not a good idea.

Rating: 56%

PRO-24 V3

£239 – Harman Audio ☎ 0181 207 5050

The first version of Pro-24 was one of the first MIDI sequencers available for the Amiga, building on the already successful Atari ST version. Many of the functions found in Pro-24 have been taken up by other software writers to provide the basis of many current sequencing packages (including the industry standard Cubase).

The main control panel is organised in a similar way to those of a studio tape recorder, with transport controls, locators, mode switches, level meters and track controls. The edit screens come in three forms: the now-standard piano-roll grid, notation or an event list. There's also a special grid for editing drum patterns, with notes being replaced with drum sound-names and triangles for beats. Continuous controllers have a sensible editing window (similar to that found on Tiger and Tiger Cub), with vertical bars being drawn and shaped into ramps and curves with the mouse.

All the requisite MIDI functions have been catered for, including pseudo-mixer functions, the ability to dump MIDI SysEx data and even add effects (such as echo) to sequences. Having said that, it's not exactly the easiest sequencer to get to grips with. The display looks a little rough and cluttered at times and takes some fathoming out. Once you've managed to find your way around, the working methods involved are pretty flexible and you can obtain some very good results quite quickly.

The price is a bit steep these days (especially compared to Music-X). A more sensible idea would be to convert Cubase itself to the Amiga and drop Pro-24's price, then both programs could shift a lot of units – after all, there must be thousands of Amiga musicians who wouldn't mind running Cubase on their machines (me for one).

Rating: 69%

RAVE

£49.99 – The Digital Muse ☎ 0171 828 9462

Designed as a low-priced entry level sequencer, Rave has a very stark, blocky 'beginners' style about it. Everything is laid out in large windows, grids and lists so that everything on screen is clean and clear with the functions themselves also being straight forward.

There's very little within Rave that you could call 'gadgety'. There are no frills to speak of here – just straight sequencing and editing functions. Again the main screen is a track list (along with transport and locate controls) and editing is carried out on a piano-roll grid. However, the grid this time runs vertically, which takes a little getting used to if you've used other sequencing systems.

There are a few interesting functions not supported by all sequencers, such as Score Editing (which has only just been introduced to Music-X users), the ability to record in drum machine-style loops and full support of MIDI files (which makes transporting data to other machines very easy).

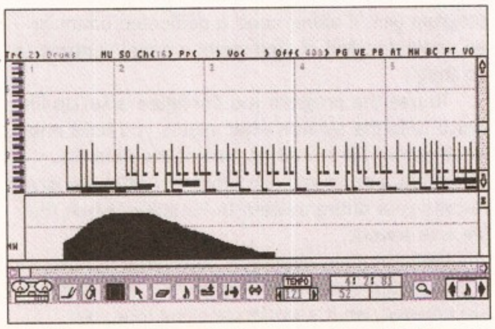
As well as triggering MIDI synths, you can also use internal samples, although the support isn't as comprehensive as that found in Music-X. Basically you just load them and play them from the sequencer. That's about it.

Rave is a decent enough beginners package and at less than fifty quid it's hardly likely to break the bank. The functions that are there do the job and let you get to grips with the fundamental areas of creating and editing tunes using internal sounds and MIDI equipment. However it is a quite clunky system which causes one or two frustrations and only really handles the basics of sequencing. To really get going, you'd be better off saving up for a more intuitive and flexible system that enables you to work in your own way rather than limiting your approach to the use of a few tools.

Rating: 62%

TRACKING

Trackers are sequencer programs aimed primarily at using Amiga samples for creating tunes. Using a tracker, you can put together patterns and string them together to create full sequences. These can then be saved as 'modules' for inclusion in games or demos. Yes, that's how all those great Amiga soundtracks are done. Now you know.



Initially, part of the KCS system, Tiger Cub is also available as a stand-alone, graphic-based sequencing program.

OCTAMED PRO V5

£30 – Seasoft Computing ☎ 01903 850378

OctaMED is the only real choice as far as trackers are concerned these days. The clever thing about OctaMED is that it fools the Amiga's sound chip into playing eight tracks of audio instead of four. This is done by making the chip play two sounds as one, so that the polyphony is doubled.

Songs in OctaMED are created by playing notes on the Amiga's keyboard to enter them in vertical track 'lists'. Each note can be a different sound, so that you can enter tunes, chords or entire drum parts however you want. Patterns of up to 64 steps can be created and strung together to form a complete song.

As well as the song-creation system, OctaMED Pro also features a whole host of other options. MIDI support has been drastically enhanced over the many versions, now offering comprehensive control over program changes, recording and playback. There's also good support for synchronisation to tape. The sample editing options are still in there, but these have been enhanced even further to make it even rival some stand-alone sample editing programs.

Finding your way around the system takes a bit of getting used to, due to the mass of windows and options to work out. There are also loads of buttons to learn, so this is hardly a system for the beginner. However, if you want to create song modules for use in other programs or just to play from disk as a part of a demo then there is nothing to rival this. The results that can be

WHAT'S SAMPLING THEN?

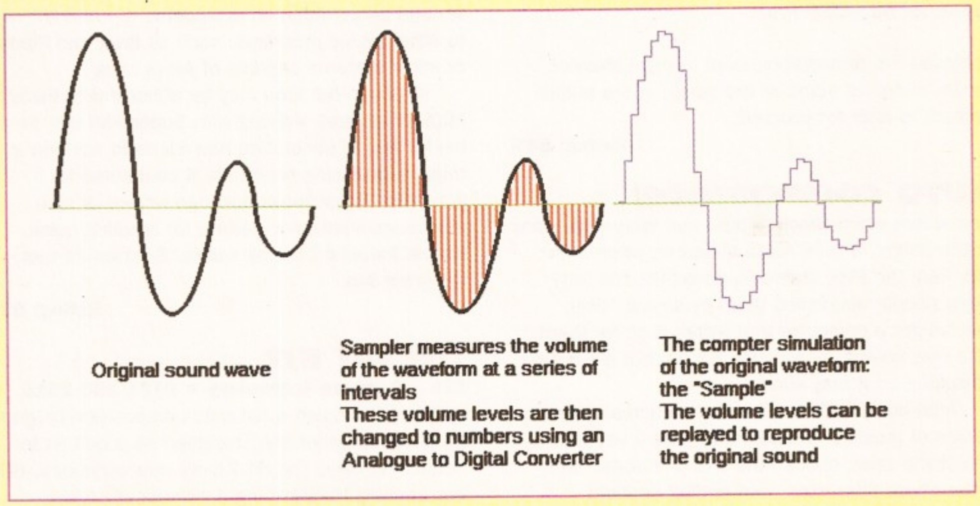
Sound sampling is a process where real sounds are turned into numbers that a computer can read and process.

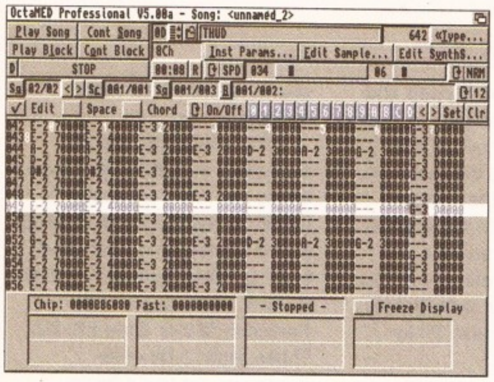
This is done by taking a series of rapid 'samples' of a sound's volume (the more samples you take over time, the more realistic a sample will sound). These readings are then converted into numbers which are stored in memory ready to be edited, flipped and otherwise messed with.

The sampled sound can then be replayed, the numbers playing a blip at the correct volume to recreate the original sound. Once stored as a sample, you can play it back at any pitch, but this sometimes causes the infamous 'Pinky and Perky' effect.

To stop this you can sample different pitches of a sound to build up a more realistic scale.

The Amiga can sample sounds to a pretty high quality, but to get really professional-sounding results you'll need to spend money on a dedicated MIDI sampler (such as an Akai S2800, Ensoniq ASR-10, Roland S-760 or E-mu ESI-32). These tend to be quite expensive, so you'd better start saving now!





The best way of creating sample-based tunes with your Amiga is to use a tracker such as the powerful OctaMED Pro.

achieved are remarkable, even in eight-channel mode. Listen to some of the songs in the public domain to hear for yourself.

Rating: 84%

AUTO COMPOSITION

Remember when Stock, Aitken and Waterman were at the height of their musical career, when chart hits from the PWL stable cluttered the top ten? Many people dismissed them by saying "Well, they've got a computer that writes it all for them." This may sound like science fiction, but it's not as ridiculous as it may sound.

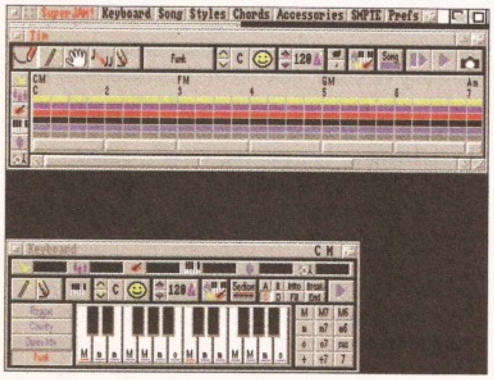
Auto composition software can actually create pieces of music in pre-defined styles – you just select the style, choose the chord changes and enter where fills, intros and ending sections should appear. The data can then be edited and arranged and saved for work in a sequencer (if you want to carry out more edits). Honestly, it really is that simple!

SUPERJAM!

£74.95 – Meridian Software ☎ 0181 543 3500

Not many people could figure out the appeal (or indeed the reasoning) behind SuperJAM! until they actually used it. Based in a similar environment to Bars and Pipes Pro, SuperJAM! enables you to put together an entire song just using the mouse. To do this you select a style, call up the keyboard window and click on the keys to play chords in the chosen style.

Once you've worked out a few ideas, you can call up another window and enter the chord changes, fills and instrument arrangements to produce entire sections. Once you've created these sections, you can organise them into an entire song. If a part isn't quite right, you can select a track and call up a more in-depth edit screen, moving, adding and deleting notes on a piano-roll grid in much the same way as a sequencer.



Need to put together songs in a hurry? Well SuperJAM! enables you to create and edit songs using style templates. What could be quicker?

Although this sounds like an over-simplistic way of making music, don't be put off. The amount of control you have over the creation process is very extensive. If you don't like the styles that have been included, you can call up a panel to create your own. This involves setting the type of rhythm, the chord progressions and arpeggiations of a basic sequence, along with all the variations that can be called in to liven up a piece.

Along with all the song creation tools, there are also windows for setting up 'bands' – an entire bank of instruments (MIDI instruments, Amiga samples or combinations of the two) used for the various parts within an arrangement – and linking to other music programs, such as Bars and Pipes or other systems capable of Arexx links.

Although the idea may be abhorrent to many MIDI musicians, working with SuperJAM! can be a useful way of generating new ideas to work on in other sequencing programs. It could also be a good tool for professional jingo writers or club musicians wanting a method for creating quick, simple karaoke backing tracks. Besides all that, it's great fun.

Rating: 82%

THE HIT KIT

£25 – Software Technology ☎ 0161 236 2515

This isn't so much a full auto composition program as an ideas generator. Designed as a bolt-on to Sequencer One, The Hit Kit creates variations, riffs and backing tracks using a number of styles. These can then be saved for editing in Sequencer One itself.

Although you can choose a number of styles, set chord progressions and enter fills, the range of utilities and tools isn't quite as extensive as those found in SuperJAM! As a source of new ideas it's not bad (and it's cheap), but it's hardly in the same league as SuperJAM! as far as flexibility and fun are concerned.

Rating: 59%

PATCH EDITORS/ LIBRARIANS

PATCHMEISTER

£79.95 – Meridian Software ☎ 0181 543 3500

Patchmeister is a strange little program which can be used in two ways – either as a stand alone system or a tool linked to Bars and Pipes Pro. It's a librarian package which stores the sound settings of the synths in your set-up and stores them to disk, and... Well that's about it really. You can't actually carry out any edits using the program (you'll either need a dedicated editor or an understanding of your synth's panel controls to do that).

To use the program you configure a set-up file which tells the system what synths you have and what should be stored as part of the data file. Once that's done you can store an entire file which returns your entire system to its status when the file was saved.

Unfortunately, despite a fairly large number of supported systems, not many modern synths are covered, so it's worth checking that your equipment can be integrated into a Patchm either set-up.

Patchmeister is a pretty useful little tool which makes sound organisation a lot more fluid, but it doesn't really go any further than that. For users of Bars and Pipes, who want a quick method of storing and retrieving entire sound banks, it's an interesting idea (at £80 it's not that expensive) which could save a fair few headaches, but for those wanting to do more synth work from their computers it might not be such a useful add-on.

Rating: 71%

SAMPLING

Although the quality won't be up to the standards of dedicated studio samplers (but they do cost a hell of a lot more), the Amiga can play back high-quality sampled sounds from its internal sound chip. Using a decent sampling package, you can record edit and store sounds for use in other sequencing packages. To do this you'll need to get a hardware and software bundle – the hardware consisting of a plug-in sampling cartridge and the software the program to record, manipulate and store the sounds. These packages will be looked at in depth in a later issue, but here are a few options that are available to point you in the right direction.

At the top of the heap is Megalosound (£34.95, Hisoft ☎ 01525 718181). Although pretty cheap, it offers the ideal package for those who know a little of the basics of sampling but want high quality tools and sound reproduction.

> **"Anyone with a simple synth and a computer can make great-sounding music."**

The cartridge records superbly, with hardly a hiss, hum or crackle to be heard (with a little patience you can get crystal clean samples in next to no time). But that's not all. The edit facilities available are without equal at this price range. There's no time-stretch or other studio-type tools (you'll have to dig out a bargain-bin copy of Audiomaster IV for that), but the trimming, copying, merging, fading, mixing, filtering, effecting and other -ings are phenomenal. For example: most sample editors let you ramp a sound to fade in or out, but only Megalosound actually offers you a range of slopes and curves to decide exactly *how* you want a sound to fade. Remarkable!

Other worthy programs are Technosound Turbo 2 (£49.99, New Dimensions ☎ 01291 690933) which is an easy to use entry level system for the sampling novice and DSS8+ (£69, Silica ☎ 0181 309 1111) which not only offers an impressive array of edit effects but also gives you a simple tracker as well. Not bad at all.

Amiga 2000, 3000 or 4000 owners have a further option in the form of digital recording cards. We won't go into detail here, since it's such a complex subject, but the basic idea of these cards is to take a sound source, sample it and record it straight to your hard drive. You can then edit the recordings to produce a final mix at the best possible quality. This type of system is starting to take off in pro studios thanks to the increased flexibility over tape. It's not cheap though – the cheapest Amiga unit costs about £400. Start saving now! AS

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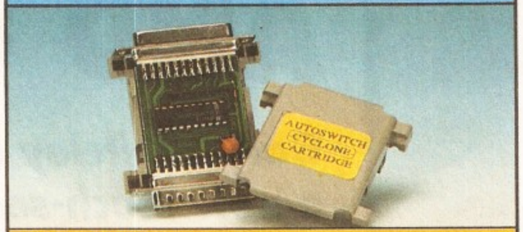
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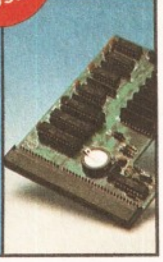
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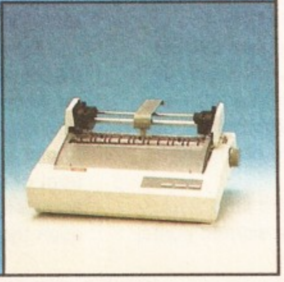
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TOUCH AND GO

Gary Whiteley reviews a new touch-sensitive screen kit – the TouchLink 1.50 from Geodesic Designs.



With a multimedia program like ScalaMM, MediaPoint or CanDO, a Touchlink screen and a bit of artistry the world of point-and-press presentations can become a reality.

So you've got this great idea for an interactive screen display to mesmerise and entertain the folks in your local shopping centre and at the same time get them interested in buying products from the nearby stores. You're damn sure that you've got all you need to make it tick – except you just can't figure out how to make it both foolproof and easy for the general public to use without running the risk of loss or damage to the mouse and/or keyboard you plan on using as input devices. So what do you do? Get a touch screen and employ it as the interface between your point-of-sale, or information display, and Joe Public – that's what!

Now, isn't it a coincidence that I've just got hold of a new touch-sensitive screen to review and you're looking for just such a thing as well? No, I thought not, but what the heck - read the rest of this review anyway and you'll find out just what a touch screen is about and how it can bring computing to people who would never have dared touch one before.

WHAT'S A TOUCH SCREEN ANYWAY?

OK, you're used to the WIMPy way that your Amiga works (that's Windows Icons Mouse Pointer if you thought I was insulting your Amiga) but what if there's no practical way of using a mouse or keyboard for a particular application? Say I wanted to design a computer-based electronic self-selection holiday brochure which would let you browse through a range of available holidays, provide images for each destination along with details such as costs, travel dates and so on. Say I wanted these devices to be installed in all the travel agents across the UK and that they had to be as easy to access as possible. Would I seriously consider using a mouse or keyboard? No – because the majority of prospective users would run a mile, even though computers are relatively common nowadays, because they just don't want to fiddle about trying to get some information out of a machine which they could more easily get from a living assistant

But if I put a touch screen on the little monster and made it so that all the worried punter had to do was press on the screen above the item of his/her choice then I think I might be onto a winner. People point and push at things all the time, so pushing on a screen makes using a machine rather more human than using a mouse or keyboard.

Now, let's just skip the hard part of actually designing and implementing the application and its database and consider how a touch screen works... Essentially a touch screen provides an alternative to the left mouse button by sending signals to the computer which emulate a mouse press, causing a command to be sent to the Amiga and activating the chosen task. This may be as simple as opening a drawer and running a program, or it might involve electronic finger painting with a paint package, or even choosing where to take your holiday. Because of the way the screen is designed (using thin conductive films and capacitance sensors all around its edges) it can sense just where a pointing finger hits it and use that information to trigger an associated event or action.

The TouchLink Touch Screen kit consists of several things – the biggest being the screen itself, which in my case was a glass-based assembly approximately 31cm by 23cm. There is also an interface box, complete with cables, which connects between the screen and the Amiga's joystick, mouse or gameport (where you actually connect it being configurable in the software).

Two disks of software are provided – one for standard Amigas and one for driving a CD³² – and there's a bag of assorted plastic bits which stick onto the screen for the purposes of mounting it onto a suitable monitor. The use of these bits isn't obligatory, as it depends on the design of your system just how you attach the screen in front of the monitor.

> *"If you need a foolproof, simple-to-configure, external input device which will last for ages, you could do worse than TouchLink."*

For the purposes of expediency I actually dispensed with these bits altogether and plumped for camera tape and some small chunks of foam packing, which did the job for me. An alternative is to use silicon adhesive to secure the screen to the front of the monitor, or attach the Touch screen to an external box. The choice is yours, depending upon the application.

WHAT
TouchLink 1.50 Touch Screen Kit – US$ 250 (around £125). Turn to page 6 for buying abroad info.
WHO
Geodesic Designs, Inc.
WHERE
Geodesic Designs, Inc. P.O. Box 956068, Duluth, GA 30136-9502, USA. ☎ 0101 404 822-0566. Fax: 0101 404 339-9995

Connecting the screen is simple, almost a case of plug and go – except that the software has to be installed first. However, thanks to the standard installation routine supplied I had this done in a couple of minutes and was ready to calibrate the screen so that it knew the boundaries and scale of my monitor, ensuring accurate pointing and sensing could take place. Then all you have you do is run the TouchLink software and you're in business. I tried TouchLink with a number of different programs, including Scala MM300, DeluxePaint and OpalPaint.

Scala (and other multimedia programs) can use a touch screen for input while a presentation is running and I knocked up a multilayer point and play presentation which worked fine. The paint programs required me to set the Hold mode in the TouchLink software for continuous finger-painting, but I was pleased to see that the Amiga followed my movements pretty well (if somewhat slowly) and all the menus (except the pull-downs) worked a treat. Pull-down menus don't work because they require a click of the right-hand mouse button and touch screens only emulate the left button.

Whilst finger-painting, a thought occurred to me – perhaps other applications could make use of the touch screen technology to allow folks with learning difficulties or limited hand movements to access some of the more creative computer applications? You never know, maybe it's already being done somewhere, but it was just a thought.

Anyway, if you need a foolproof, simple-to-configure, external input device which will last for ages (if you mount it *inside* a secure case) you could do worse than using a touch screen such as TouchLink. As I said, just Touch and Go! AS

CHECKOUT
TouchLink 1.50

Documentation **50%**
Minimal and not overly helpful, but adequate.

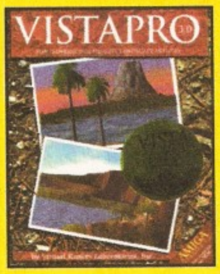
Setting Up **90%**
Calibrating this baby is a piece of cake and it appears to be very accurate.

Ease Of Use **95%**
No big problems here – just Touch and Go!

Value For Money **95%**
Not much competition around, so there's not much comparison, is there?

Overall **90%**
Simple to use, easy to install and it works. What else is there to say really?

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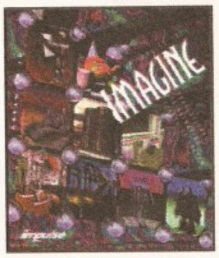
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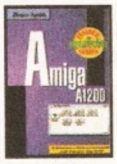
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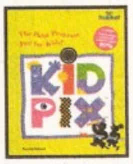
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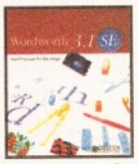
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Space Saver

Graeme Sandiford evaluates the latest entry into the continually expanding Amiga 1200 CD-ROM market – AlfaData's PCMCIA controller and external drive combination.

You would have thought that the demand for CD-ROM drives for the 1200 and 600 would have begun to peter out. Instead the demand for CD-ROM drives has increased, especially for the 1200. It's not surprising then, that this continued demand has encouraged more manufacturers to produce their own drives. So far, most of the drives that have appeared have been variants of Mitsumi's FX001D twin speed drive adapted for external use, as there is quite obviously no space for internally fitting a CD-ROM drive to a 1200. The Tandem interface and CD-ROM combination is just such a drive.

I know that some people will disagree with me on this one, but I think the drive is actually quite attractive in appearance. I know it's a bit large, but it has a wonderful 1980s sci-fi-like casing – full of grooves and pits with some stylish moulding. To match the 1200's colour, and to add to the 1980s sci-fi look, the casing is cream. As I said, it is a little on the large side, it is approximately 2.5 inches high, 8 wide and 10.5 deep.

The Mitsumi drive slots into the left-hand side of the casing as part the right is occupied by its internal power unit. The power lead is inserted at the rear of the case as is the cable from the interface. Also located at the rear are to phono sockets and what appears to be a SCSI connector. However, none these are functional, but are instead just part of the casing. As with most CD-ROM drives, the front of the case has a headphone socket, volume dial, eject button and power and disc access lights.

The interface, which fits into the PCMCIA slot of the 1200 and 600, is also cream in colour. Inserting it into your machine is easy as it fits quite snugly, but not tightly. However, connecting the cable to the interface is not quite so easy, as you have to line up the two rows of holes with the two rows of pins that are inside the plastic case of the interface. While this style of interface may have been OK for use with the big-box Amiga version of the Tandem, as the lead will not be knocked or pulled because it is fitted internally, it is not particularly well-suited for connection to an external drive. Although you can quite easily buy a longer cable, the connecting cable from the interface and the drive is a little too short to make positioning the drive easy or convenient.

Installing the software is fairly straightforward as the installation script uses Installer. However, the scripts failed to recognise my home 1200, which has had its motherboard changed, as a Workbench 3.0 machine, although there where no problems with the machines I tested it on in the office. You are given several options during the installation process, such as having the CD drive mounted on start up and choosing which utilities to install. These include EjectCD – a program that can be used to eject a CD by clicking on button on your Workbench screen, the popular PlayCD audio CD player and KillDev – a small program that will unmount the CD0: device for you. The second installation disk also includes the software necessary for CD32 emulation.

WHAT CAN IT DO?

So how does the drive perform and what kind of things can you expect to do with it? Well, like most of the other PCMCIA CD-ROM drives the drive mechanism is based on the Mitsumi drive – so you won't get any vast differences in performance. The drive is multi-session compatible so you'll be able to access PhotoCD images. You'll need to buy additional software, though, as none is supplied. A useful advantage to having a CD-ROM is being able to play audio CDs and as this drive is twin-speed capable, you'll be able to annoy your friends by playing your favourite CDs over and over again.

Like any other group of people, Amiga-users are a mixed bunch who put their machines to a number of different uses and therefore have different needs. While some only use their Amigas for the most serious of tasks, others want to have it all – a powerful computer and a potent games-playing platform. The CD32 is one of the most powerful games machines (not forgetting its multimedia capabilities, of course) available, but it's not that different from the 1200. Bearing the similarities of these machines in mind, built-in emulation of the CD32 is obviously a desirable feature for a CD-ROM drive.

The Tandem has opted for the cheaper alternative for emulating the CD32's capabilities – software emulation rather than hardware. Obviously, this option will not work on the 600 as it's a tad difficult to emulate the AGA-chipset. Although, the emulator can be used to run CD32 games it will not enable you to run CDTV-specific games. The CD32 emulation software provides options that have been designed help improve compatibility, such as turning off Fast memory, instruction caches, data caches and emulation of the CD32's controllers by using a combination of a joystick and certain keys.

However, as the emulation is software based, it has to be run before anything else – even to allow you to simply boot from CD-ROM. Problem is that most games need to be run from bootup. The way that the software gets around this problem is quite clever, yet very simple. There are two scripts: one that will create a bootable floppy disk; and another that will change your Hard Disk's startup-sequence. If you choose to run the HD startup script you'll be able to boot from CD by holding down a function key of your choice. If you choose to create a boot disk, then every time you boot with it in your drive then the CD0: is automatically mounted and will be booted from.

That's about it really, the drive works and is relatively easy to install. However, that is not enough, the drive has plenty of competition with more to follow. At the moment its main competition is the Zappo drive and frankly, I wouldn't put any money on the Tandem coming out on top. For one thing it's too expensive – you need to purchase three components the interface, the drive and the case with the power supply. That works out at approximately £238.25. As well as being more expensive the drive's build-quality is less than that of its competitors' – the interface in particular. If you are looking for a CD-ROM drive, this can do the job quite adequately, but the Zappo model can do it better and for less. AS

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CHECKOUT
TANDEM A1200 CD-ROM

Installation: 80%
Relatively straightforward on the software side, but the hardware installation could be improved with a better interface.

Ease of Use: 84%
Once installed, the use of the drive is transparent to the user and the boot up and emulations arrangements are easy to use.

Value: 70%
The drive is too expensive when compared with similarly specified units.

Overall Rating: 79%
Although useable, the drive suffers from a lack of quality and a prohibitively high price-tag.

3D Heaven

There are loads of 3D goodies floating around – the trouble is finding it can be hard work. Graeme Sandiford has a look at two CD-ROMs that may be heaven-sent.

You may find this hard to believe, but there are thousands of 3D objects and utilities to be found. However, while there may be an abundance of such multi-dimensional goodies, finding them is no easy task. One of the best places to find 3D objects and utilities is the Public Domain sector. There are plenty of people out there who are building objects and writing programs. Of course finding good PD is not that easy either. PD libraries often have models of their own and BBSs can also be a good source.

However, one of the best places to find the latest and best 3D stuff is the Internet. There are a few sites that are devoted to, or contain, files that will be of interest to 3D artists. A good example of such a site is Avalon (avalon.chinalake.navy.mil), which has hundreds of 3D objects, texture maps, conversion programs, answers to FAQ and even 3D source code. Another excellent source is the Syndesis 3D-ROM (reviewed in issue 40).

Following the success of their first 3D-ROM, Syndesis have just released volume II and they have also taken a snapshot of the Avalon Internet site and released that on CD-ROM.

THE SON OF 3D-ROM

AMIGA SHOPPER BEST BUY

3D-ROM II features more than 200 all new objects saved in Imagine, LightWave, DXF, 3D Studio and Wavefront formats. As with the first CD, the models contained in 3D-ROM volume 2 cover a wide range of topics.

However, the discs do not follow the same format, as the second volume doesn't include the texture files found on the first one. I was looking forward to the new textures on the second disc, so I was a little disappointed. However, it would have been difficult for them to generate, or find, textures that are different enough from those on the first disc to warrant inclusion.

The disc has an images directory as well as a demo one. The image directory contains rendered pictures of the objects, so you can get a better idea of what the objects will look like. The images have been stored in the PCX format and can therefore be viewed by using most picture viewers. The demos directory contains demonstration files and programs. However, most of these are aimed at the PC market and consist mainly of demo anims and demonstration versions of PC software.

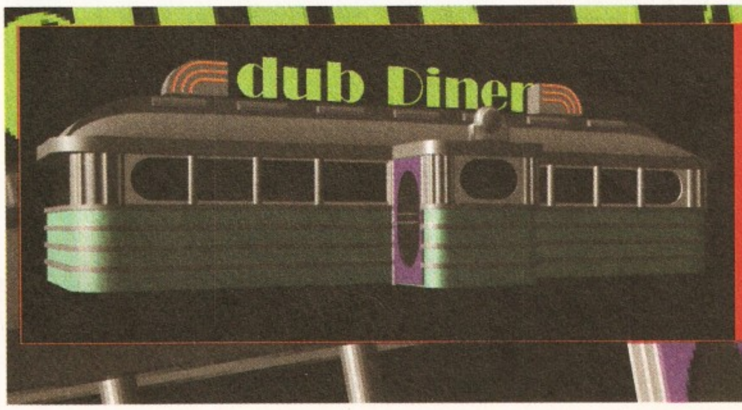
The CD-ROM's directory-structure is pretty much the same as before – several directories for each format, but instead of having files lose in the format directory all the files are in their source directories. For example, if a LightWave format cow object was made by Viewpoint, you would follow this directory path lw/Viewpoint/cow.

To help you find the type of object you are after, you can turn to the catalogue supplied with the disc. The catalogue contains rendered images of the objects with their name underneath. You can simply flick through the catalogue and when you find something that suits your needs you can check its name and then look for its location on the disc, by turning to the front of the catalogue. The front contains a list of objects by name. Alternatively, you can search for an object by its description. You can do so by turning to the index at back of the catalogue where the entries are listed according to their kind (cars, aircraft etc.).

The objects themselves, are less numerous than volume I's, but they make up for the lack of numbers in their quality. There really are some first rate objects – they are well-modelled and very detailed. This means you'll need more memory to render them, but that's just a sad fact of life. As with the first edition, if you are into 3D rendering and animation, then you simply must have this CD!

Product: 3D-ROM Volume II
Price: $99.95 (about £60)
Supplier: Syndesis Corporation
Tel: 0101 414 764 5200

Verdict: 92%



I don't know – all this 50's revival stuff is beginning to get on my nerves. However, this is a rather tasty LightWave model of a 50's diner taken from Syndesis' 3D-ROM Volume 2.

A PIECE OF THE ACTION

The best way to explain what the Avalon CD is, is to relate it to a snapshot of the site. It's exactly the same as the AmiNet CD-ROMs – they contain all the files that were present at the site at the time of the snapshot. Likewise, the Avalon disc contains all the 3D objects, textures and FAQ that were on that site at the time.

The disc retains the same directory-structure as the Internet site, so if you have visited the site before you should have no difficulty in finding what you are after. However, as this is a snapshot of the site, none of the objects or textures have been converted by Syndesis for use on the Amiga. As a result, most of the files have been saved in file formats that were intended for other platforms such as the SGI.

To gain access to them you'll need a conversion program, such as Syndesis' own Interchange Plus. In some respects the Avalon disc might be considered a poor man's 3D-ROM – the 3D-ROM contains models that have been converted while the Avalon disc's contents need to be converted.



Drop your mouse! You have exactly fifteen seconds to comply...

Most of the models that can be accessed directly from the CD-ROM without conversion, are in the Imagine format. However, many of the objects have been around for some time and were included in 3D-ROM volume I. On the whole I was more than a little disappointed with the contents after revelling in the contents of the two 3D-ROMs. However, Syndesis did include a disk of UNIX utilities that could be used to read text files and decompress archived files.

Although only half the price of 3D-ROM volume II, the only reason you might consider buying this disc is if you have Interchange Plus already and would rather spend a few hours converting objects just to save yourself $50 (turn to page six for advice on buying from abroad). If you have a life, buy 3D-ROM volume II instead.

Product: Avalon
Price: $49.95 (about £30)
Supplier: Syndesis Corporation
Tel: 0101 414 764 5200

Verdict: 73%

Hard and removable



On the left we have the MoMiga Magneto-Optical Drive, while on the right we have the Bernoulli Box.

Richard Baguley looks at two removable disks which may banish the "disk full" message.

It's a common problem. You're a few frames away from completing the graphics for your latest raytraced piece when that dreaded mesage flashes up: "Disk Full". If you are doing *anything* that's going to need a lot of space, you should look at getting hold of a removable drive. We'll take a look at two new drives which promise potentially unlimited storage space.

MOMIGA 1.2GB MAGNETO-OPTICAL

Although a Magneto-Optical Drive sounds like a refugee from a cheap 1950s Sci-Fi film, it is a relatively new technology for disk drives. It uses a combination of magnetic (as used in floppy disks) and optical (as used in CD-ROMs) techniques to pack a stonking 1.3 Gigabytes onto a single 5 1/4 inch disk.

Physically, the MoMiga is not particularly outstanding. There are two types of case available for the external model, the most expensive of which is an MOD standard case which features delights such as filtered fans, extra tough casing and a space for you to rest your medals on. This will cost you an extra £145 on top of the price quoted on this page, so I wouldn't bother with it unless you are planning on using this drive in a hazardous environment such as a factory, workshop or nuclear test site. A small selection of jumpers (to control things like the SCSI id) are located at the back of the case. In use, the drive is extremely quiet, with only a slight humming from the fan and the occasional clunk as the drive head moves around.

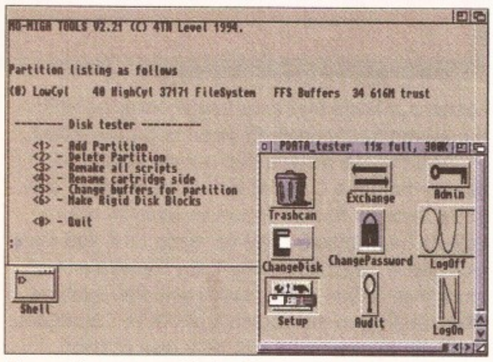
Unlike most other drives, you can only use one side of a disk at a time with the Magneto-Optical Drive. Given that you can fit just over 600Mb on one side of a disk, I can't see this being a real problem for most people, although it might have been nice to be able to access an entire disk at one time. However, MoMiga are currently working on an auto disk changer which will be able to hold up to 24 disks and automatically swap between them, so you could have up to 24 gigabytes available at any one time. Yowtch.

Two floppy disks accompany the drive and these hold the software which drives the beast. Unlike the Bernoulli drive, there are a selection of custom written drivers which talk directly to the drive. Support is provided for eight different SCSI controllers, and a general driver is also included which should work with any other drive.

The drivers also allow you to use a variety of different filing systems, including PC and Mac ones, so you can swap disks between different machines with no problems. There is also support for the NetBSD filing system, which allows you to share drives over a network. If you are running on a Workbench 3.1 machine, you should also be able to format a disk to a different sector size (1024 bytes per sector instead of 512) which can also increase the speed of the disk.

Several other programs are also included which allow you to add security to a disk (so you can't access a disk without the password) and audit software which allows you to track who has been accessing the disk and when. All of the software which sets up and formats the disks is CLI only, and is not particularly friendly. Rigid disk blocks are not used by the software, although they can be written out for compatibility reasons. Although this custom driver business sounds a bit bizarre, its completely invisible to the user, and the disk behaves like any other, with Icons appearing on the desktop. It also does not interfere with any other SCSI devices connected to the SCSI bus.

Although this disk looks very fast from the figures below, these should be clarified slightly. Data transfer is extremely fast on this disk, but



The software supplied with the MoMiga unit is pretty basic, but not very difficult to work with.

WHAT
MoMiga
1.2Gb Magneto-Optical Drive
£2115 (internal model)
£2250 (external model)
£141 (1.2Gb Cartridge,
5 for £570)
WHO
Fourth Level Developments
WHERE
Fourth Level Developments
☎ 0117 955 8225

CHECKOUT
MoMiga Drive

Ease of use: 75%
Although setting up the disk is a bit of a pain, once this is done, it's very easy to use.

Speed: 90%
Whoosh. Faster than a good many fixed disk mechanisms I've come across in my time.

Features: 90%
The support for a compendious range of filing systems make this especially useful for moving data between machines.

Value: 90%
By no means cheap, but if you need very large amounts of space, this is an excellent solution.

Overall: 90%
If you need very large amounts of storage space, this drive will provide an excellent solution to your needs. It's fast, flexible and reliable.

AMIGA SHOPPER BEST BUY

SPEED'S THE THING...

It's a pretty common misconception that removable drives are slower than their fixed counterparts. However, the figures below show that this isn't necessarily true. We carried out some speed tests on the two drives reviewed on these pages, and then carried out the same speed tests on a pretty typical IDE fixed disk.

All of the tests were carried out using the same SCSI interface card on the same machine (an A4000/040). All of the figures are derived from the PD program DiskSpeed, and are the averages of the various different tests the program uses.

	Write1	Read1	To3	From4
Bernoulli Box	239893	786038	14	8.5
MoMiga Drive	307891	908195	13	8
A4000 IDE drive	405526	570843	13	9.5

SCSI drive

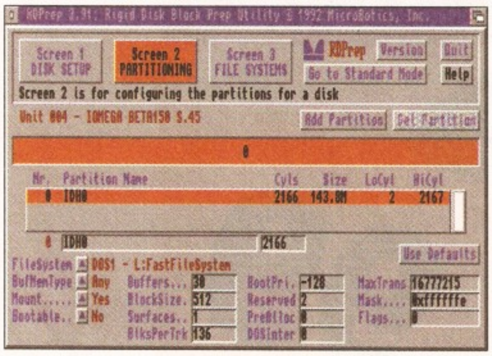
1 – The average number of bytes which can be written out to a file (per second).
2 – The average number of bytes which can be read from a file (per second).
3 – The time taken to copy a 5.5Mb animation file from the RAM disk onto the drive.
4 – The Time taken to copy a 5.5Mb animation from the disk to the RAM disk.

PRICING THE OPTIONS

One way of assessing a product like this is the price per Megabyte method, where you calculate how much each Megabyte of storage space costs. For a Iomega Bernoulli with one cartridge, this works out at £3.70 per Megabyte, which sounds rather expensive when you contrast it with the figure for a pretty typical SCSI drive, which comes out at around £1.00 per Megabyte.

However, the Bernoulli drive starts to sound more attractive when you add another two cartridges (which cost £95 each, giving a total cost of £745), with a cost per Megabyte of £1.65. Things get even better with a cost of £1.24 per Mb when you have five cartridges.

The MoMiga drive starts out at the very acceptable cost of around £1.62 per Megabyte, and this falls rapidly, hitting an extremely good £0.34 per Megabyte if you buy five extra cartridges, giving you a total of 7.2 Gigabytes of disk space. Whether you will ever actually need this amount of space is another question.



Although no software is supplied with the Bernoulli drive, you can use the standard HDToolbox program, or a PD version such as RDPrep (above).

seek times are slower than a fixed disk as the drive head has further to move. However, they aren't significantly slower, and this drive performed extremely well when measured against a fixed model.

This drive certainly provides an elegant solution if you have a need of extremely large amounts of disk space, but it isn't cheap. However, if you look at it in terms of what you are paying on a per Megabyte basis, it's extremely reasonable. Of course, you wouldn't want to buy a disk like this unless you needed a very large amount of disk space, but if you do, then this is one of the best removable drives I've ever come across.

BERNOULLI 150MB

The Bernoulli disk is named after a physicist who discovered the effect which makes aeroplanes fly. I haven't got the space for a full explanation here, but suffice to say that it's all to do with relative air pressures, velocities and the like. In terms of this disk, it means that the head hovers a few micrometers above the disk without actually being held there by the springs and the like used on most disks.

Physically, the Bernoulli box is pretty imposing, measuring a good twenty five by thirty by eight centimetres. A lot of the space inside the case is taken up by a pretty beefy-looking power supply, and an internal version is available which fits comfortably in a 5 1/4 inch drive slot. On the front is the drive slot and a carrying handle.

The disk is inserted in the front and, unlike most other drives, it sticks out of the front by an inch or so. This looks a little bit odd, but it isn't really a problem. It also means that you can change the write protection tab without having to remove the disk. However, flicking this to "protect" gave me a write error, so I probably wouldn't recommend that you do this very often.

Ejecting a disk is done by simply pressing the button on the front (which stops the disk spinning) and pulling it out. Removing a disk without doing this could cause you serious problems. Inserting and removing disks seemed to cause no problems, although it should be noted that this very much depends on the SCSI controller used.

For this review I used an A4091 SCSI -II controller, but other older types may be less forgiving with removable media. On the rear of the drive are the SCSI ports (in and through), which are of the 50 way centronics type. There's also a small switch for changing the unit number of the drive and a small socket used by the PC Parallel port interface (which is not supported on the Amiga).

This drive is a SCSI II mechanism, which meant that it gave some very respectable data transfer rates when used with an appropriate SCSI interface. You won't get the same speed when using a SCSI controller, but it still goes at a pretty respectable rate.

Although this drive is pretty reasonably priced, others are quickly catching up. You can now get a 105Mb Syquest drive for around £400, and these prices are dropping all the time. At this price, the Syquest becomes a real competitor for this drive, although it is faster than most other drives of this type.

This is certainly a very fast and flexible solution to the problem of ever-expanding requirements for disk space. It really illustrates very well the principle of removable disks. When you need more space, you just buy another cartridge and plug it in. However, I don't think it's likely that this will replace fixed disks completely. It's more likely that you would want to use a disk of this type as well as a normal fixed hard disk. In this sort of circumstance, this disk provides an extremely elegant, fast and flexible solution.

Stop press – we've just heard that a 230Mb model will be available for the same price. AS

WHAT
Iomega Bernoulli drive
£555 (external)
£485 (internal)
£95 (150Mb cartridge, one cartridge supplied with drive)
WHO
Iomega
WHERE
White Knight Technologies
☎ 0992 714539

CHECKOUT
Iomega Bernoulli Drive

Ease of use: 80%
With a suitable interface, it's just a question of plug and go.

Speed: 85%
Not as fast as a fixed drive, but faster than most other types of removable media.

Features: 80%
Not much in the way of bells and whistles, but it does its job effectively.

Value: 80%
A (reasonably) cheap solution to the never ending problem of insufficient disk space.

Overall: 82%
A good portable solution, but the benefits over cheaper Syquest removable drives are not that many.

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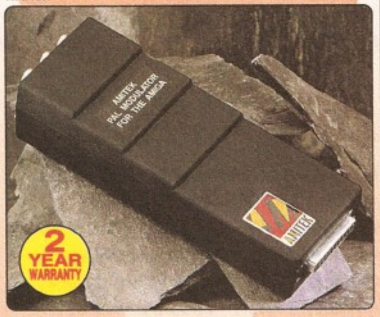
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RAM 0520	A500PLUS - 1Mb RAM	£30
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RAM 0610	A600 - 1Mb (With Clock)	£40

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In FLOPS (FLO Point operations per Second) Figures from AIBB version 6.1

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FLOPS	1.0	40.27

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INC VAT - RAM 1210

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DELUXE FEATURES

The Amitek drive has many deluxe features not included in other drives - check out the competition!

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This feature stops your drive making whirs and clicks when the drive is empty and searching for a disk.

ANTI-VIRUS

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Details taken from models available MARCH '94	ANTI-CLICK	ANTI-VIRUS	ROBUST STEEL CASE	QUALITY SONY MECHANISM	TOP RATED CU-AMIGA MAY '94 90%	2 YEAR WARRANTY
AMITEK	✓	✓	✓	✓	✓	✓
CUMANA	–	–	–	–	–	–
ZAPPO	–	–	✓	–	–	–

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INTERNAL DRIVE
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INC VAT - DRI 3600

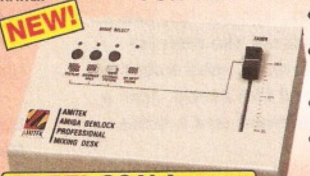
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.... 213H

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The Three Ds of 3D

Part One – Design



Mojo, the man who works alongside special-effects wizard Ron Thornton on the TV series Babylon 5 in Los Angeles, shows you how you can create almost anything in 3D – perhaps even a model of Elvis!

3D is a tricky business. I've been at it for almost three years now and I'm still no damn good at it. It's a bitch to learn, nearly impossible to get good at and your eyes inevitably go bad from staring at a monitor twenty hours a day. But it's a lot of fun! With 3D animation, you can create anything you can imagine. Planets, monsters, spaceships, fish... anything. What's more, *you* are the man (or woman -*Ed*) in charge. You don't need teams of model builders, painters and film crews. Just a computer, some decent software and a brain.

NO DAY AT THE BEACH

As was said at the outset, learning 3D animation is no day at the beach. It's tough work, more akin to a day cleaning subway toilets with a toothbrush and spit. Gruesome? You bet. Unless you think you're serious about this stuff, I'd turn the page now and read a game review. 3D ain't like stamp collecting, mate.

It would hardly qualify as a hobby. You can't dabble in it, spending a couple of hours with it here and there when you get a chance. You must embrace it and let it consume you like a good pint of ale. Speaking of which, if you decide to proceed with your training, you must leave the pub behind – you won't have time for it.

It's also mandatory that you forget about girls, parties, record shopping and all other forms of social activity. You must live 3D. You must spend every possible minute you can in front of that machine, learning the ways of the Jedi – er, I mean animator. If your electric bill doesn't triple, you're not doing your job. Still feel like going through with it? Excellent! Welcome to 3D boot camp, and I'm your Drill Sergeant!

A LITTLE HISTORY

The Amiga has always been at the forefront of 3D animation. Ever since the late 80s, animation software has been developed on the machine and it has now reached a state of maturity paralleled only by the most expensive platforms available.

Fortunately, the Amiga remains cheap and easy. The early years of Amiga 3D were treacherous indeed, mostly involving software that had little or no interface. Much of the vast amounts of information needed to create 3D objects had to be entered by hand – almost programmed – and was definitely not for the weak at heart.

With the release of Imagine (Impulse) some years ago, 3D had reached the Next Level. It boasted very powerful, high-end features and had a reasonably good user interface, finally allowing for the majority of work to be done with the mouse. The program has been supported well over the years, having had many fine updates, making it (I would say) one of really only two serious choices for the 3D enthusiast.

The problem Imagine had (and still does) is its learning curve. It is a very difficult piece of software to get the hang of, making the tough job of learning 3D even tougher. The manual is mediocre at best and there are few other resources to turn to.

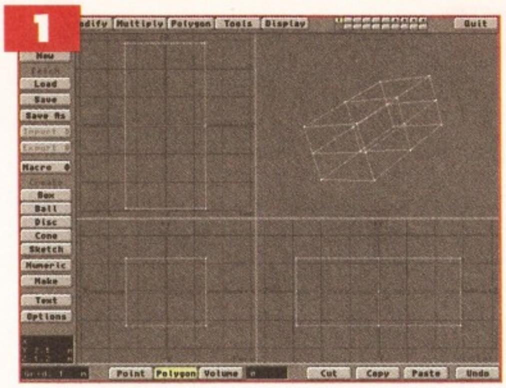
In all honesty, it has usually been the choice for people who haven't had the dosh to shell out for Newtek's LightWave 3D, with Video Toaster attached. Fortunately, Newtek has separated LightWave from the Toaster and now sells it for a very reasonable price. For those of you who have been too busy cleaning toilets to notice, LightWave is the 3D animation software responsible for the special effects in programs like Babylon 5, seaQuest DSV, Robocop – The Series and even a few bits in Star Trek.

The feature list is excellent and it is, by far, the easiest of 3D programs to learn. I cannot recommend it highly enough. If, for some reason, you have dedicated yourself to another piece of software, take heart – good animation is a result of the artist, not the software. Most programs contain the tools necessary to create fine work as long as you're willing to take the time and effort to learn how to use them.

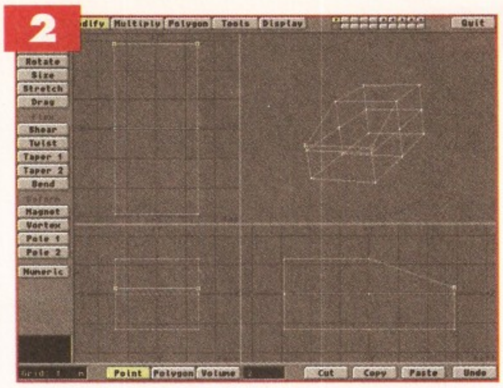
So, although the examples I will be giving are from LightWave's point-of-view, the lessons taught here should apply to almost any software you can

BUILDING A POD

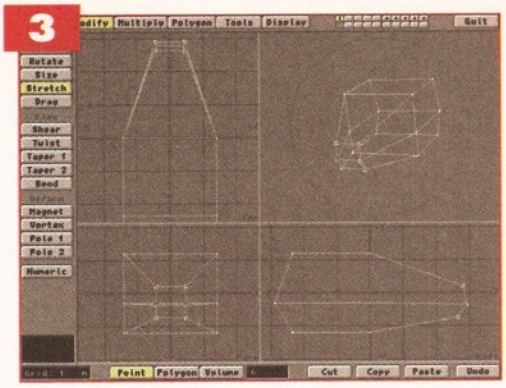
On the other page is a numbered run through showing you how to build your very own Babylon 5 cargo handling pod (as shown on the illustration above) in 12 simple steps,. The example has been created in Lightwave, but the techniques shown in this could easily be applied to any 3D program, such as Imagine or Real 3D.



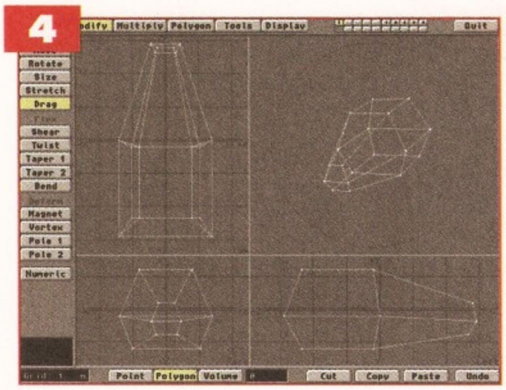
Let's work on the body first. Making this segmented box is as simple as clicking the 'box' button and dragging the mouse. Following so far?



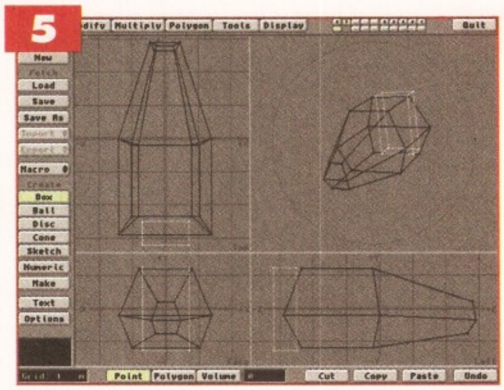
Select the two points as shown and move them down to start making the ship's nose. Drag just a few more vertices and the body really begins to take shape.



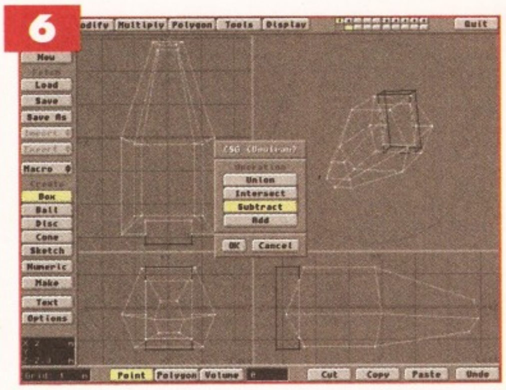
Selecting the points in the nose and stretching them inward really defines the front end.



Points on the roof and then the base are similarly stretched into a cool-looking shape. As you can see in the perspective view, a few simple steps has brought our box a long way.



Let's make a recessed door in back of the pod. In a separate layer, create a box in the position where you would like to remove a bit of the body. See-through to the first layer to line it up.



To create the cockpit window, make a cutting box as before in another layer. This time, use the 'Stencil drill' tool. It will not remove, but add polygons where the two objects intersect.

get your hands on.

MODELING

No, not the type you see in magazines. Large breasts and muscular chests are not a requirement for this type of model work. In fact, if you're in good shape, then you're not spending enough time sitting lethargically in front of your computer! 3D modeling is the process of building three-dimensional models inside the computer.

It takes a little getting used to, as work is done simultaneously from three views – usually top, side and front. This is vital, since whatever you build can eventually be viewed from any angle you choose – making it important to see what it looks like from all sides while you work.

These three views are also known as X,Y and Z, the primary axis of three dimensional space. The X axis is more or less left to right, Y is up and down and Z covers in and out. All 3D work happens within this realm, so try to remember what X,Y and Z mean at all times.

3D objects are made up of polygons, the basic building blocks of three-dimensional worlds. Polygons are like pixels; individual pixels are nothing but squares. However, if you put enough of them together, they begin to take on a shape, usually a picture. Polygons are also flat squares (sometimes triangles) with no individual meaning. Yet, when many of them are placed together (and in the right order), definitive shapes emerge that become 3D models containing thousands of polygons.

Luckily, you don't have to place every individual polygon in order by hand. In fact, most complex objects are made up of many simple ones, usually cubes and spheres. Most 3D programs allow you to make simple shapes very easily, usually by just dragging the mouse.

Figure 1 shows two spheres, both made in this fashion. However, the one on the right contains twice the number of polygons. The result? Look at the edges of both spheres. If the one on the left got too close to the camera, you would notice that the sphere was not round at all, but made up of many straight lines (actually edges).

This is similar to zooming in too close on a low-res image and seeing the stair-stepping of the pixels. The closer you get, the higher the resolution needs to be. In 3D, the closer you get to a rounded surface, the more polygons it needs to 'fake' a smooth edge. Figure 2 shows several other 'primitive' objects, easily created in seconds by most software.

Once an object is created, it can easily be moved or rotated into a desired position or angle simply by selecting the desired tool and dragging the object with the mouse. Cut and paste features allow you to mix and match shapes to make more complex ones.

LightWave's modeler has a unique (and extremely handy) system of layered modeling,

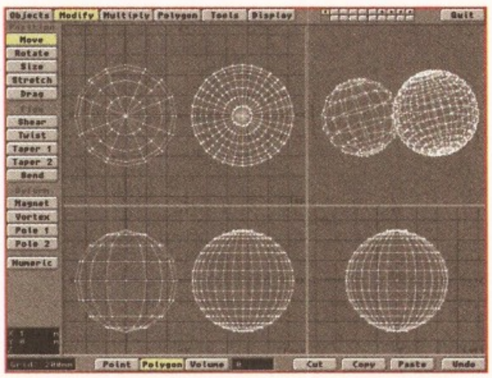


Figure 1: 3D with balls. Can you tell which has more polygons? Although the X,Y and Z views look identical in this example, notice the perspective view in the upper right. It can be rotated using the mouse for a view from any angle

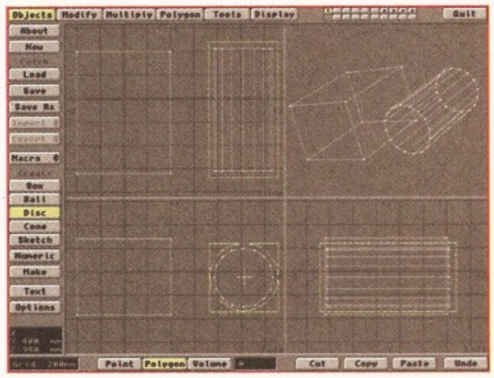
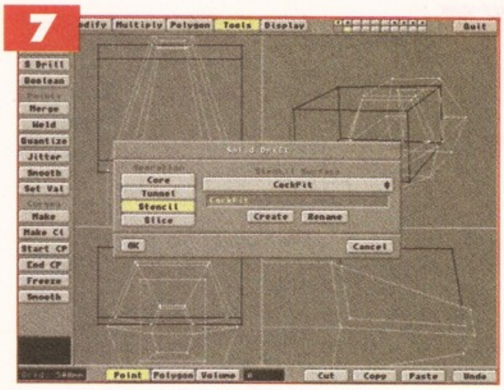
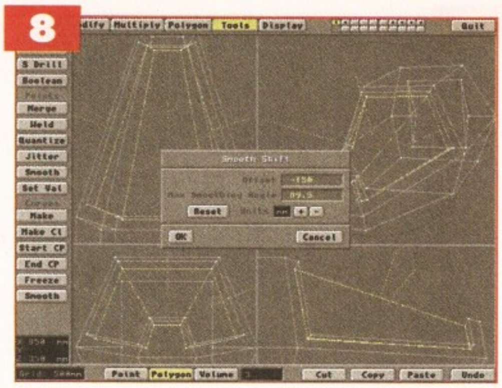


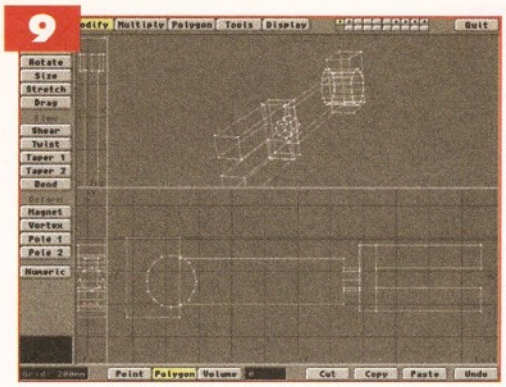
Figure 2: Simple objects, made simply. Click on the type of shape you desire, drag out a box to define it's size (the yellow box) and hit Return. Presto! It would take longer to draw these with a pencil



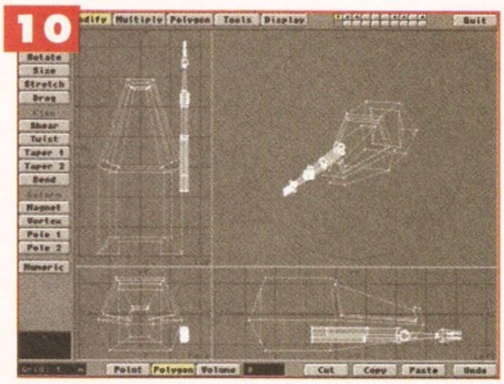
To recess the window slightly (and give it an edge), select the window polygons (shown in yellow) and use the 'smooth shift' feature. Enter the distance you would like it shifted.



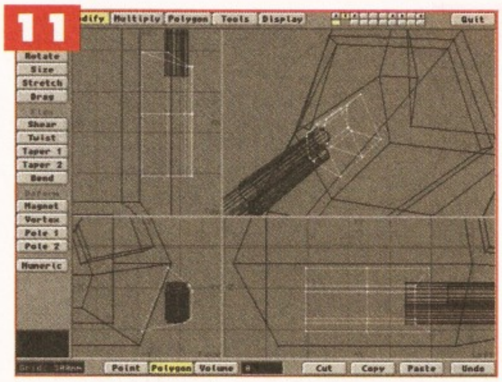
Here's a close-up of the WorkPod's arm. Once again, it's built up from a few simple objects: just boxes and tubes.



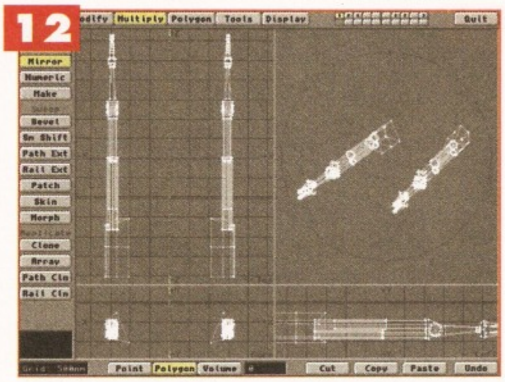
However, using the features listed above, a few simple modifications can turn it into something much better! Tapering boxes, cutting holes and adding plain cylinder arms is all that was done!



The arm is cut from one layer and pasted onto the Pod body. It looks a bit out of place – something more is needed



In another layer, a simple shoulder was made so the arm will look attached to the Pod. The 'onion skin' feature makes this a breeze! But one arm?



Using the 'mirror' command, the arm is duplicated in reverse for placement on the other side of the Pod body. A second arm in less time than it takes to belch!

similar to the spare page in Deluxe Paint. In essence, you have ten individual modelers to work in, all interchangeable. This allows you to create and work on individual pieces separately before you combine them. You even have a sort of 'onion skin' ability, which allows you to see (and even work in) several (or all) layers simultaneously, so you can get an idea of how objects will look together before actually cutting and pasting them (see figure 3).

WHAT WAS I THINKING?!

Trying to explain 3D modeling to a beginner with words alone is like describing the new Megadeath album to someone who's never heard one – examples are much more effective. Therefore, these pages will offer a visual guide to modeling in three dimensions.

It will even show how an inexperienced maggot like yourself can create a Babylon 5 spaceship in no time at all! When you've finished looking at all the pretty pictures, you may proceed to the next section.

THE NEXT SECTION

Now, that doesn't seem so difficult, does it? You may have noticed a slight difference between the full colour version of the WorkPod and the wireframe mess the pictorial ended with. This is because model building (design) is only the first step in the big, wide world of 3D animation. The Pod, as it is now, is in a stage known as geometry. All that exists is the basic shape. Now it must be detailed and painted! Also called texture mapping (in 3D terms), this is an object's finishing process.

However, I know I've already given you a lot to chew on this month, so why don't we wait until the next issue so we can give it the attention it deserves. Look for the second D of 3D next month. In the meantime, remember – no fun is to be had! Grab a bag of biscuits, lock your door, remove the off switch to your Amiga and start Pod building... AS

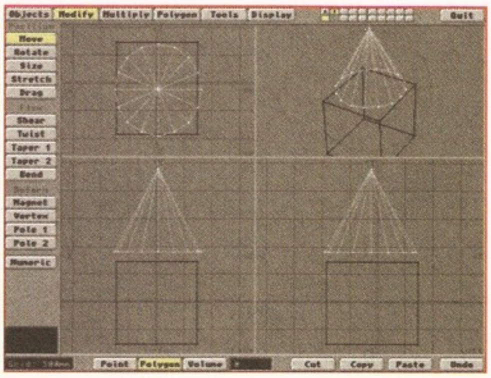


Figure 3: White objects (the cone) represent what is in the current layer. The darker objects (the box) show an 'onion skin' of what is in the secondary layer. This makes multiple object alignment a snap!

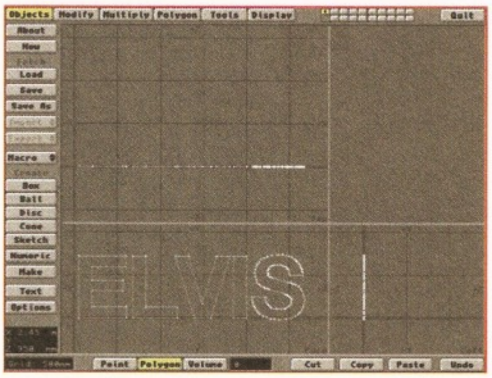
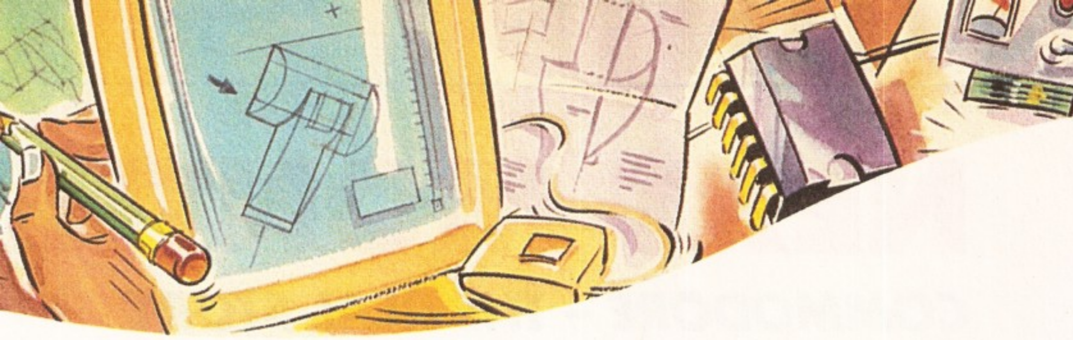


Figure 4: Creating 3D logos is big business in animation. LightWave allows you to simply choose a postscript font and type one in. After your text is generated, creating the third dimension is easy...

ABOUT THE AUTHOR

Mojo works alongside special effects wizard Ron Thornton on the TV series Babylon 5 in Los Angeles. He claims to be originally from a small planet somewhere is the vicinity of Betelgeuse and believes Elvis is still alive, although he has not yet provided any documentary evidence of this. If you look carefully at the Babylon 5 space station, you can probably see a picture of him mapped on to it somewhere, along with all sorts of other stuff that should not be there.

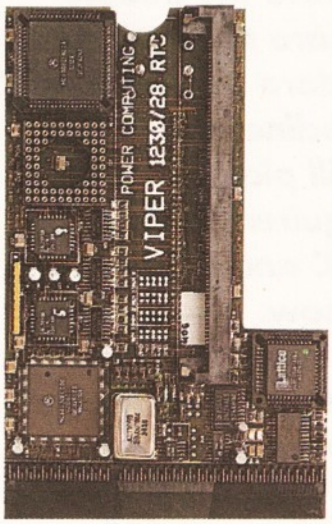
He welcomes readers to send in comments and Red Dwarf stuff not for sale in the USA (just about everything). Send your letters to: Mojo c/o Amiga Shopper, 30 Monmouth Street, Bath BA1 2BW.



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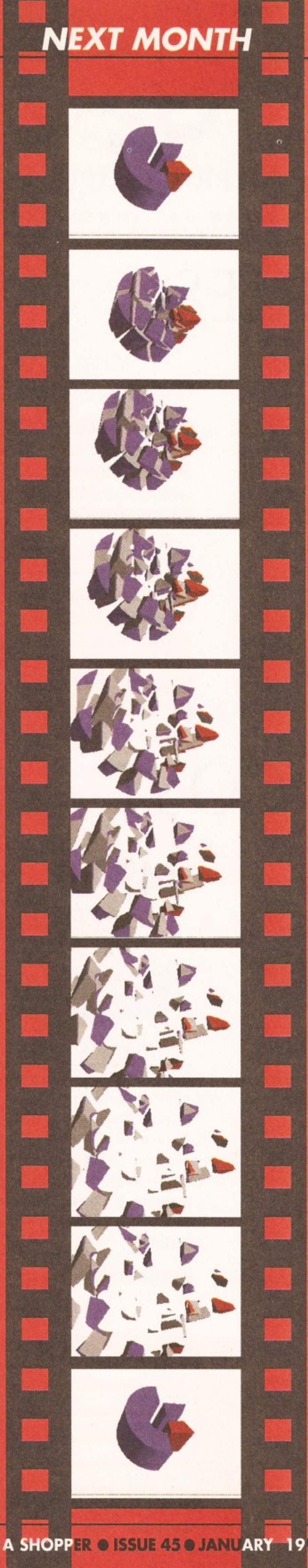
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COMMODORE – THE REAL STORY

Next month we will be taking a long hard look at the rise and fall of Commodore. Where did they begin? Why did they fail? Where are the people who built the Amiga now? What are the real facts behind the liquidation of Commodore International? When they make the film "The decline and fall of the Commodore Empire", who will play Medhi Ali? Dan Stets (of the Philadelphia Enquirer) finds out what really happened to the big C and where the people that made it happen are now.

Plus, all the usual tutorials on subjects such as C programming, Comms and the latest instalment in our series on how to write your own chess program. Not forgetting the next instalment in our series "The Three Ds of 3D", where the 3D experts from Foundation Imaging show you the secrets of creating professional-looking 3D images and animations.

Don't forget our reviews – next month we'll be taking a long hard look at Wordworth 3.1, Final Writer 3, Personal Paint 6.1 and Almathera's new image processing program, Photogenics.

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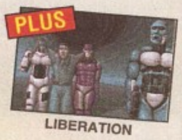
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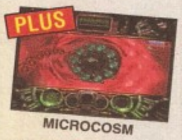
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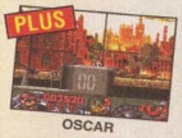
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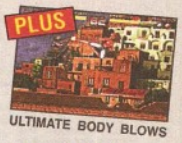
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Davey Winder on the hype surrounding the Internet

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Sure, I'd have to agree that the media coverage given to the Internet is nothing short of amazing, but then so is the Internet itself.

Back in the days when the telephone was just starting to become something that was finding its way into more and more homes I bet there was a heck of a lot of media excitement about that, would you have complained then?

No I doubt it because you would say that the telephone changed the way we live. *So will the Internet.* Let's take a look at a few facts, shall we. In just 10 years the Internet has seen its user base increase from 5,000 to over 30 million – that's a growth of 6000 per cent. An estimated one million people are hooking up to the Internet for the first time every single month.

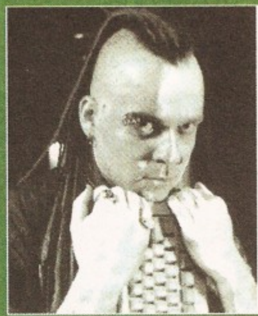
Electronic Mail is now a way of life to thousands of businesses and individuals, for example most of the articles you see in this copy of Amiga Shopper will have been sent from the homes of freelancers, across the Internet, using email. More and more companies are realising the opportunities that exist within the Internet, shareware registration and distribution, technical support, software upgrades, marketing, distribution, and that's just the start.

Already you can rent a car using the World Wide Web to take care of all the arrangements, get quotes from the financial markets, take care of your bank account, listen to previews of new records, read the news headlines, get a satellite map of the current weather anywhere in the world, talk to old friends and make new ones anywhere in the world.

"Oh do me a favour," I hear you say, "I can make friends by going to the pub". Well sure you can, but would you wander into the Dog and Duck carrying a dozen signs that said "I like fast cars", "I support Millwall", "I paint gerbils red in my spare time" and so on? Of course you wouldn't, but using the Internet you can declare your interest in such matters by joining a Usenet Newsgroup or a forum where *everyone* will share those interests, where everyone will have something to say on the matter. Think of the time you can save in finding friends with mutual interests.

You may well be fed up with hearing about the Internet. I can live with that. So stop hearing about it, stop reading about, and start using it. If you don't you may find that you are becoming as left behind as someone who has had their right buttock removed! Unless you think that the telephone was a really bad idea and the world would be so much better off without it, give the Internet a try. You may just be very pleasantly surprised.

Davey Winder is the author of "Internet, Modems, And The Whole Comms Thing" and "All You Need To Know About The Internet" (call ☎ 0225 822 511 to order your copies) and can be contacted by E-mail at dwindera@cix.compulink.co.uk



"Unless you think that the telephone was a really bad idea and the world would be much better off without it, give the Internet a try. You may just be very pleasantly surprised."

Graeme Sandiford sniggers at the expense of PC-owners



"The great thing is that we can snigger at the price PC-owners will pay for the products we've enjoyed on the Amiga for years."

If there is one thing I dislike about my job, it's having to go to London every now again – don't take it personally, but I hate London. However, last month I was actually looking forward to travelling up to 'The Smoke'. I went to the Computer Graphics Expo to evaluate the, forgive the sad pun, state-of-the-art in computer graphics.

To be quite honest I was a little disappointed. I expected to spend the day standing in a pool of saliva, mumbling wow! every now and then and thinking of ways in which to raise the necessary dosh to buy an SGI – such as taking out a mortgage or feigning my death to collect my life assurance payment. In fact, as things turned out, it was a rather small and uninspirational show. There had been relatively few advancements made in computer graphics software.

I dutifully made a brief trip around the stalls, collecting magazines and sales brochures as I went. Much to my surprise, I did find something of interest – a couple of Amigas. That, in itself, was not much of a surprise – the unusual factor was that they were both running alongside PCs.

In fact they were running the same software – no don't worry it wasn't boring PC software, but a couple of Amiga-originated products. Both Activa and DPS had stands exhibiting Real 3D and the PAR card respectively.

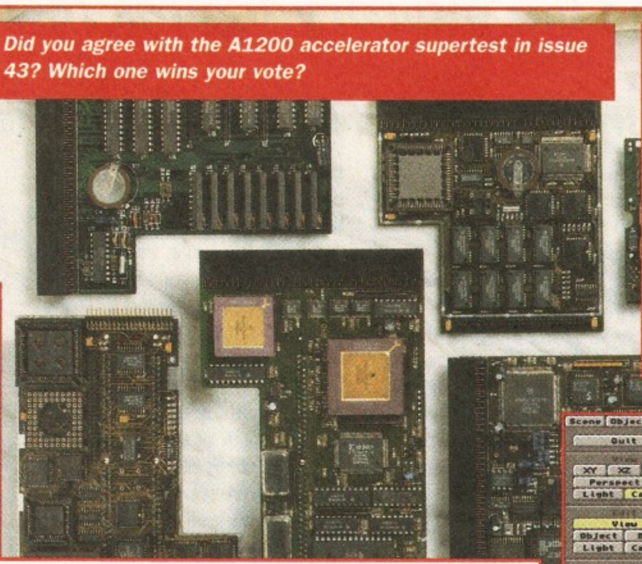
Blinking typical, I thought, first Lightwave is due for release on the PC and SGI and now this! After repressing the urge to curse them and their offspring and call them traitors to their face, I decided that this was actually not a bad thing at all. I mean, it's not as if they had deserted the Amiga – after all both companies will continue to develop and support their products for the Amiga.

It makes financial sense for the companies involved – if there's an opportunity to expand their market, they should do so. It will generate more revenue for them and aid the development of their products for the Amiga as well as other platforms.

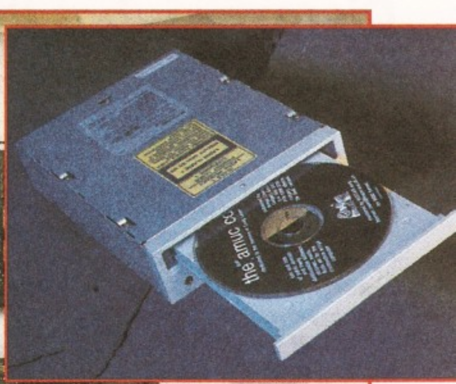
However, these products are just not the same as their original versions, simply because Windows is not an adequate replacement for Workbench. The great thing about it is that we get a chance to snigger at the price PC-owners have to pay for the same products we've enjoyed on the Amiga for years – it just goes to show what a great development platform the Amiga is!

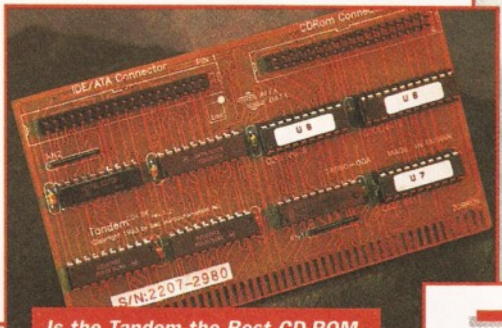
The Amiga Shopper Awards

Have your say on the best Amiga products of all time and win a £400 voucher...

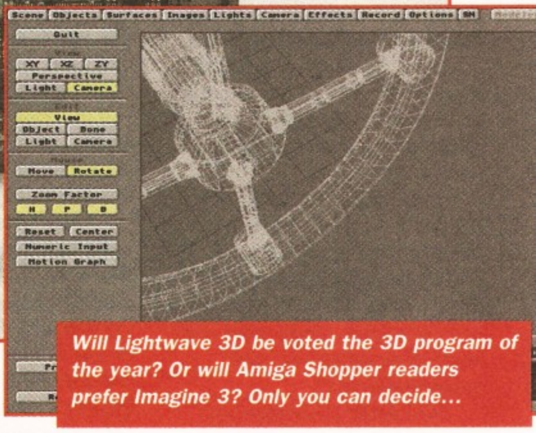


Did you agree with the A1200 accelerator supertest in issue 43? Which one wins your vote?

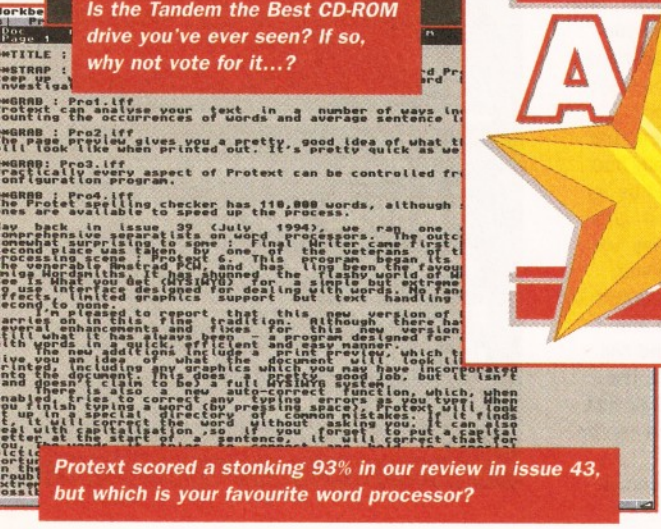




Is the Tandem the Best CD-ROM drive you've ever seen? If so, why not vote for it...?



Will Lightwave 3D be voted the 3D program of the year? Or will Amiga Shopper readers prefer Imagine 3? Only you can decide...



Protext scored a stonking 93% in our review in issue 43, but which is your favourite word processor?

AMIGA SHOPPER STAR PERFORMER

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There is no doubt that there are a vast number of innovative, exciting and unusual products available for the Amiga. Everything from PD image processing programs to immensely powerful accelerator cards can be found out there somewhere.

Here at Amiga Shopper we hate to see all of that inventiveness going unrewarded, so we have decided to recognise the efforts of the people who design, build and market these products by setting up a whole new concept: ***The Amiga Shopper Star Performer Awards***. These will recognise the efforts of the great and the good in the Amiga world, be they a PD programmer or a company pioneering the cutting edge of Amiga technology.

And who better is there to pick the products which should receive these awards than you – the Amiga Shopper reader and devoted serious Amiga user? So, all you have to do is to pick the programs or products in the various categories below, and we'll tally the votes to find out what you, the serious Amiga user think is the best product available in each of the categories.

So what sort of thing could you vote for? Well, just sit down and think about all the Amiga stuff that you have. Which DTP program do you use the most? Which piece of video hardware has made your latest extravaganza easier to make? All you need to do is write the name of the product in the space on the form in these pages and send it in to the address that follows.

You don't have to vote in all of the categories, so just leave the 3D programs one blank if you haven't used any 3D programs. The products you nominate don't have to be new ones – if you've been using a product for several years and it's been incredibly reliable, then why not nominate it in one of the hardware categories. After all, reliability is important too...

Don't forget that we are also looking for the best PD programs. Has the PD version of the networking software TCP/IP made your life easier? What about the PD image processing program Image Studio? Would you vote for this as the PD utility program of the year?

There is also a special bonus category: Amiga Person of the year 1994. If you think there is one person on the Amiga scene who has done more than any other to push the Amiga forward, nominate them here. It could be a PD programmer, it could be a hardware designer, animation designer, or even somebody who wrote a book that you've found incredibly useful. It could even be somebody you know who has used an Amiga in a strange or unusual way.

And don't forget the final category – The Editor's Special Award for innovative Amiga use. This will be decided by the Editor of this magazine, and will be awarded to the person who, in his opinion, has made the most interesting or inventive use of the Amiga. Please feel free to send in your suggestions for this category.

In order to make it worth you while sending in your entries, we've got together with noted Amiga dealers Gordon Harwood Computers to offer you a quite stonking prize. One person will be the lucky winner of a £400 voucher, which they can spend on any product sold by Harwood's. You could buy yourself a new Hard Drive, or get hold of a modem and video digitiser without having to spend a penny! You could even get your Amiga moving by fitting an accelerator! If you don't vote, you can't win...

The Amiga Shopper Awards

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SOFTWARE

DTP/WP Programs

....

3D Programs

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Animation Programs

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Video Software

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PD/shareware Utilities

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PD/shareware Animations

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CD-ROMs

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HARDWARE

Printers

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Accelerator/RAM card

....

Scanners

....

Modems

....

CD-ROM Drives

....

Hard Drives (& Interfaces)

....

Video Hardware

....

SPECIAL

Amiga Person of the year 1994

....

....

....

Details of all entrants will be supplied to the sponsors of these awards. If you do not wish to receive any further information from them, please tick the following box. ☐

Just cut out (or photocopy) this form, and send it to the usual address:

Amiga Shopper Awards
Future Publishing
30 Monmouth St
Bath
Avon
BA1 2BW

Alternatively, you can E-mail your entries to:

Awards@Amshop.demon.co.uk (Internet)

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Please, only one entry per person. The closing date for the awards is Tuesday, January 31, 1995. All the usual competition conditions apply.


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Close Encounter

– an investigation into Amiga addiction

Have you ever wondered what turns a seemingly sensible man or woman into a crazed Amiga addict? Well, our Production Editor, Anna Grenstam, decided to find out for herself.

Amiga Shopper has been my home and castle (figuratively speaking – we actually reside in an office the size of a first class stamp) for nearly a year now and I am still amazed by the sheer enthusiasm and loyalty oozing out of all the telephone calls and letters we get from Amiga fans. Such devoted enthusiasm deserves more space in the magazine, I thought, and decided to find myself an Amiga addict to grill.

Luckily, I didn't have to look much further than my own back garden (turn of phrase again – we are lucky to have a *window*, let alone a garden) to find what I was looking for. Gavin Shelley lives and works in Bath and even went to Bath University where he used Amigas frequently... *and* he is a true Amiga buff! What more could I ask for?

You did Software Technology at Bath University and are now a Designer/Programmer with IPL in Bath. Do you feel that you have achieved what you aimed for?

Well... not really. Basically, I want to do computer graphics/special effects in the computing industry. As it were, there was a software company in Bath that pays me lots of money and gives me some industrial experience, if not *exactly* what I want to do. I will do this for a while and then try to find something more *specifically* graphics-based – something to do with animations, video graphics, special effects... that sort of thing.

Would you rather produce the packages to be creative with, than be 'artistic' yourself?

I'd *like* to be the creative, artistic person, but unfortunately I'm not, so I'll settle with writing the software for people to be creative with.

To what extent do you think creativity and artistic flair is of importance in creating computer graphics?

You can sit there with Imagine 3, Lightwave, or a similar package and absolutely *anyone* can create an amazing flying logo, but to do something truly stylish you definitely need some creativity.

For example, I was a student volunteer at SIGGRAPH, a special interest group on graphics, at the yearly massive conference organised by ACM (Association of Computing Machinery) in the States. 30,000 delegates go to this conference – it's *the* Computer Graphics Show of the world – and in all the adverts for graphics jobs it said: "No flying logos, please". As I said, anybody can do flying logos, but to do something else *does* require a lot of creativity.

Did you do any graphics projects at university?

I did a final year project which was a morphing program and I was very pleased to find that it actually worked. It would have been nice to do a PhD in graphics or animation, but I just didn't get off my rear end to sort that out. I still think about it when work gets really boring, but I think I've got used to the money now and to go back to being a student for three or four years would be hard.

If it was handed to me on a plate and I didn't have to go and search for one, I probably would. As it is at the moment I think I'll try to achieve my goals in the job-line and not the research-line.

What are your plans for the immediate future?

What I'm hoping to do is buy a nice big A3000 or A4000/030 and actually do something with that. I'd like to do some graphics programming to have something more concrete to show, and that, combined with my industrial experience, should hopefully get me where I want.

Have you always been interested in computers?

I started off with a VIC20 and I stayed with Commodore all the way from a 64 and a 128 to my A1200 today. My interest in computers was definitely there from an early age, but it wasn't the *only* thing I did. It was very much a summer and winter thing. Football in summer and in winter I played with my computer – mainly games of course.

What made you interested in the more serious side of your Amiga?

I think it was a friend I had in Maidenhead, Stuart, who was a really good computer artist. He was one of the first ones to have an Amiga, a 1000 I think it was, and a digitiser. We spent a great couple of days at school going around taking photographs of all our teachers – we then took them back, Stuart digitised them and produced short videos with all the teachers' heads in.

We also put the heads in little cartoons and that was just *so* amazing. I just used to sit there and watch him in total amazement. I'm not that artistic and creative, but I certainly appreciate it when I see people who are. My creativity usually stretches to sit with DPaint and have a play. That was, anyway, when I started getting interested in graphics and realised what the Amiga could do.

Why did you choose an Amiga rather than any other computer?

Hmm, well, I don't really like to talk about this... I had an Atari ST for a while, but when I saw what Stuart, my friend and 'Amiga mentor' could do on his Amiga, I realised what I was losing out on. Also, at that time, I was mainly interested in games and the early Amiga games were so incredibly superior to anything I had ever seen – Defender of the Crown, Marble Madness and Fire Power – they were just *so* good.

What were your first serious Amiga projects?

I got DPaint 2 with my Amiga and started copying cartoons and playing around with graphics – that was really the first more 'serious' things I did.

What would your dream Amiga set-up be?

I'm basically waiting for Commodore to sort themselves out. Once I know what is happening, I'll buy an A4000/030, put a CD-ROM drive in it, buy a modem and get 'Interneted' again – that's what I *really* want to do.

Have you got any Amiga 'Hero' or 'Heroine'?

I don't think I have *one* individual hero, but I really like CinemaWare, the company who produced Defender of the Crown, Rocket Ranger and They Came From the Desert – I like their style of graphics.

What do you think about the Internet?

I'm a definite fan and believer in the Internet. It was great having at university and one of the first things I'll do when I get a "big box" is to buy a nice modem and get connected.

What's so great about it?

Information, basically! Keeping up-to-date with the latest information on a multitude of subjects. When I sat down to write my final year project I thought, "hmm, morphing – there aren't any books about it. Where can I find some information? Ah, yes, the Internet". It really is great!

Have you ever been a member of a User Group?

No, I haven't actually. I have *thought* about joining one when reading about them in different Amiga magazines. However, I've always known a lot of people with Amigas to swop information with.

Have you ever managed to persuade anyone else that the Amiga is a great machine?

When I went to Bath University, I persuaded the student television there to use Amigas instead of



Reader Hot Seat

Name: Gavin Shelley
Date of birth: 22 July 1972
Place of birth: Maidenhead
Amiga set-up: I have an A1200 with 80Mb Hard Disk at present, but I'm just about to buy an A4000/030, a CD-ROM drive and a modem.
Profession: Designer/Programmer with IPL
Education: **Desborough Secondary School**
A levels: Maths, Further Maths, Physics, Chemistry (A, B, B, C)
University: Bath University – (BSc) Computer Software Technology
Hobbies: Films, videos, bowling, graphics (on the Amiga, of course).

the Archimedes they had. "You don't want to use an Archimedes, you want an Amiga." For the first year I used my own Amiga, doing all their graphics, titles, intros, credits and anything they wanted done on a computer, really.

So, were they convinced after that then?
Bath University bought my computer off me when they were convinced that it was the best computer for the job. Then they bought two A1200s and the following year they expanded on that – one has now got a nice 030 board and 10Mb of memory in it and the other one has just got lots of memory.

One is now the production machine, which is the rendering engine – it sits there with Imagine 3 rendering all night. They've also got a 6Mb 1200 which controls a Panasonic Professional Video Deck with Scala for the close circuit television network around the campus.

Have you ever done anything that you are particularly proud of, to do with Amigas?
Well, again, that must be converting the Station Manager for the television network at Bath University, who was very much an Archimedes fan. It took about a year before he finally admitted that Amigas were better and wanted to buy some.

What did you actually do, or say, to convert him?
It was a case of showing him what it could do and how easily it could do it. Most of the stuff they do up there is video-based – we had an old Rendale Genlock and it was just the ease of plugging it all in; everything worked so well. All the hassle that they used to have vanished over night! Also, we were just up to DPaint 3 then and that was just *such* a good piece of software. If you know how to use it well, you can do *so* much more than just animation and graphics stuff.

What software do you use and what software would you like to use, given the opportunity?
I bought Imagine 3 through the special offer in Amiga Format and that is very nice, if somewhat slow. I would *love* to play around with Real 3D 2 with all its particle systems, dynamics and stuff. Particle systems are really great! I would like to play around with LightWave and Aladdin 4D as well, but they are in a different league really. Scala is another amazing piece of software – it does just about anything that the university wants. It's also *so* easy to use for all the first year students.

Scala, DPaint and Imagine are the main packages they use at Bath University – and background generators of course. They've also got VistaPro, which is very nice for backgrounds. Unfortunately, they are on a very limited budget, or I'm sure they would try a lot of other software.

Do you think Amiga software is too pricey?
Definitely not compared to other PC software. For equivalent packages they are excellent value – but is still a fair bit of money if you haven't got it.

What about the hardware?
Well £300 for a basic machine, which you can do so much with, I think is very good. If you start heading towards the A4000s, put in extra memory and start expanding those, *then* you start getting a rather pricey machine. Then, on the other hand, you'll have to add so many sound boards and graphics boards to PCs.

Have you ever considered swopping your Amiga for another machine?
No, I don't think so. I like its graphics capabilities and when I get my A4000 I will hopefully be able to put some sort of Unix on it, so I can have Unix and X Windows, as well as an Amiga. I would *never* go for a PC because they are just so expensive. To get what I want would cost a fortune... and I rather have an Amiga basically.

What particular features of the Amiga would you highlight to convert a die-hard PC owner?
It's very difficult to convert PC owners, because they see all these fast 486s running all these nice CD-ROM games in Dixons. They *do* look good, but PCs really aren't worth it – they are just so unreliable. They are horrible, because so many things get plugged in and some things don't work with other things. It's lovely to just have one box which you can plug into a television if you wish. The scrolling is another great asset of the Amiga – PCs just can't scroll things as smoothly as the Amiga can – no matter what Chip you put in it.

What Amiga project would you do if you could do anything, absolutely nothing stopping you?
It would have to be two projects: one really nice game, some type of textured, flight sim-type game; and I'd also write a SoftImage-type software – some nice particle system, inverse kinematics-type software.

What's your greatest Amiga feat?
I finished Beast 1... yes, yes I know it's a game! Well, again it has to be converting Bath University to the glory of Amigas really. NASTA (National Student Television Association) have a conference with various competitions every year.

Last Easter, we went up to Birmingham for a competition, entered a compilation of all our snazzy computer graphics produced on the Amigas

"All the other student television networks were sitting there with their awfully slow Archimedes, PCs or STs and we were in a totally different class with our Amigas – there was just no competition..."

and we won! All the other students' television networks were sitting there with their awfully slow Archimedes, PCs or STs and we were in a totally different class with our Amigas – there was just no competition. That was a really good moment, because it really showed everybody what the Amiga can do.

Were you the only university at the NASTA conference using an Amiga?
Yes, I think we were. Other universities have them, but I think they just don't know what to do with them, or have old 500s that perhaps can't cope with what they want to do. We got our 1200s very early actually – we entered Commodore's Development Program as we had some plans to develop some software, but then Scala came along and did it all for us, so there was no need.

Could you use the Amiga in your present job?
Well... no – in a working environment I have to say C, Unix and X Windows are much nicer than an Amiga or PC with Windows. It *does* depend on what sort of software you develop, however. At IPL, where I work at the moment, we just use terminals off the big servers and you can do anything with that – Amigas probably *could* be connected up but they just wouldn't be mainstream enough.

What's the Amiga's major down-fall, in your opinion?
What, apart from Commodore? I think it's got to be marketing, it's got to be the fact that Dixons sit there and sell ten different types of PCs, so that



when parents go into the shop they'll buy one of those instead. How can they consider an Amiga when they'll probably never heard of one?

Well you see, when it comes to your average family, who have no real interest in computers – who aren't real fans or enthusiasts – then a PC is probably best at the moment. So many more shops can help them, tell them about it and offer after-sales support. There is bound to be more friends and acquaintances they can talk to and get help from with a PC.

What about the Amiga's greatest assets?
NewTek and the Video Toaster! There's an awful lot of software houses that still write some truly brilliant programs for the Amiga – programs that would not have seemed possible a year ago.

What would you do if you could buy out Commodore and take over tomorrow?
Get the machines back in the shops and get the software companies who are warily sitting there on the fence, producing for the Amiga again. Software is *so* important for a machine and you really have to help software companies, give them information and support their efforts to produce new exciting programs. AS

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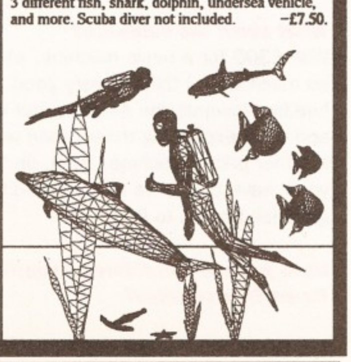
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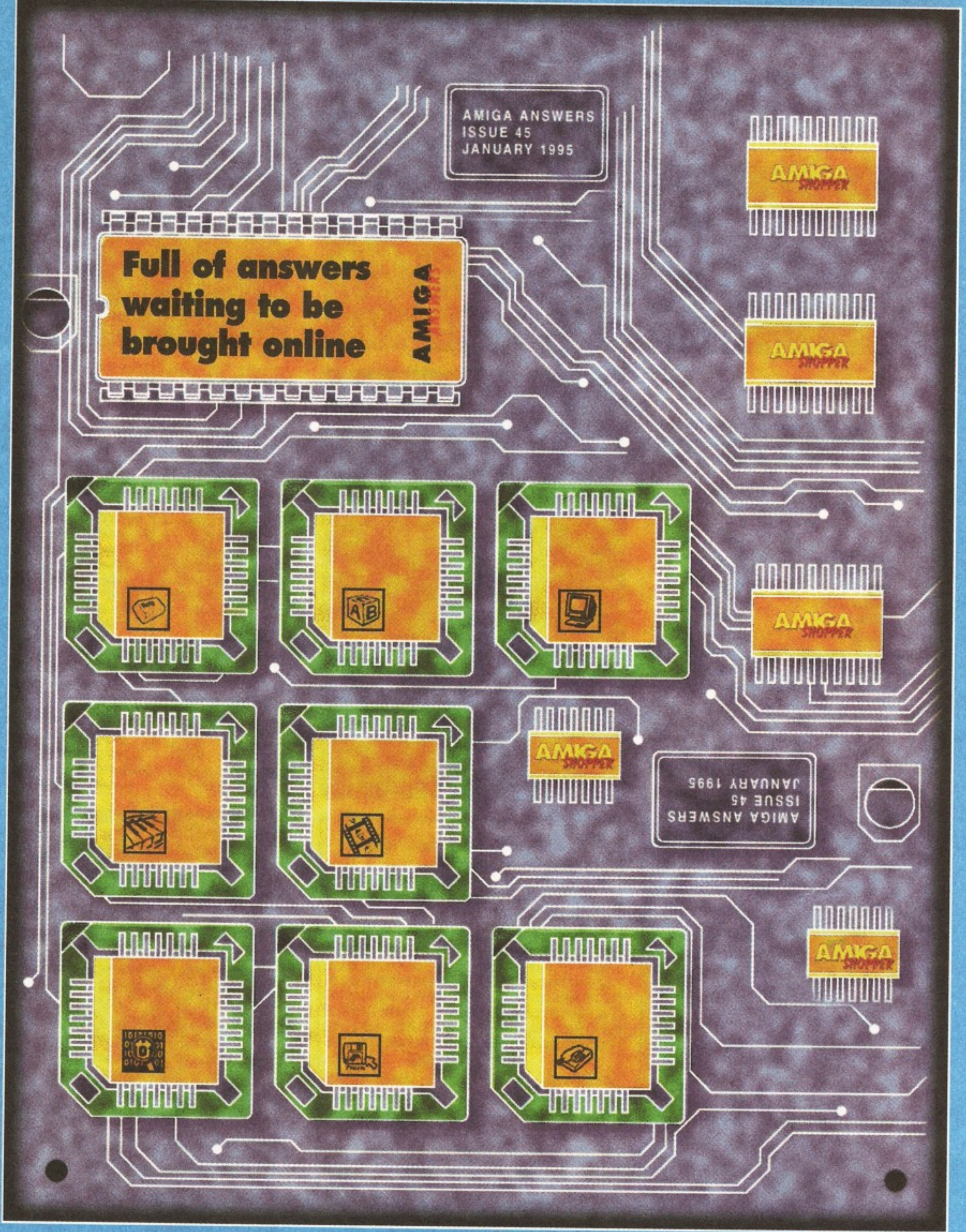
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What is Amiga Answers?

Do you have a problem with your Amiga? Is something on your Amiga not working the way it should? In this section of Amiga Shopper we answer questions posed by you, our readers. All you need to do is to fill out the form on page 48 and we'll set our team of experts onto the case...

OUR EXPERTS HAVE THE ANSWERS TO YOUR AMIGA QUESTIONS



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Questions relating to comms, including modem.

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NO PROBLEM!



Graeme knows it all... nearly!

Hello and welcome once again, to the area of *Amiga Shopper* where you can turn to find all the answers to questions concerning your Amiga. It's my privilege, as *Amiga Shopper's* technical writer, to make sure that not one of your problems is left unsolved. Don't worry, we can help – no matter how simple or complex they may be. At *Amiga Shopper* we want you to get the very best out of your Amiga. That's why we devote more space than any other magazine to this indispensable service, so please make the most of it and keep your questions coming in. We'll do my very best to find a solution to all your problems.

Don't worry if you come across any unfamiliar terms, just turn to one of our jargon-busting boxes to receive an explanation. The problems are put in a wide context for everybody's benefit. The index on the previous page is your guide to the topics covered this month.

By now, you are probably familiar with our team of Amiga experts. **Mark Smiddy** knows all there is to know about AmigaDOS and floppy drives. **Jeff Walker** is our desktop publishing, fonts and printer correspondent. **Gary Whiteley**, is a trusted expert on video applications and graphics. If you have a query about comms, we'll set our communications guru **Dave Winder** on the case. **Toby Simpson** is our code clinician. If you've got problems with anything from C to assembler, try taxing his little grey cells. Finally, we've got a man you can rely on when it comes to operating systems programming – **Paul Overaa.**

CROSSDOS PROBLEMS

GENERAL

I cannot get CrossDOS to run despite having tried both of the ways described in the Workbench 2.1 manual. No matter what I do I still only see one icon and CrossDOS refuses to recognise PC formatted disks?

Stephen Halliday
Ingleburn, New South Wales
Australia

Once CrossDOS is up and running, and a PC disk inserted in your Amiga, you should certainly see two icons. The fact that you do not suggests to me that CrossDOS just isn't starting up properly. One possibility that I happen to know produces failures that do not always result in any obvious error messages concerns something called the mfm device which CrossDOS uses this to do all direct MSDOS track read/write operations.

My guess is that either the mfm device isn't in the Devs directory at all, or that the assigned Devs: directory is not accessible at the time you activate CrossDOS. Another, admittedly less likely possibility, would be a snag caused by a wrong devs: assignment but my money is on one of the first two causes.

If, incidentally, you find that the mfm device isn't in your day-to-day Workbench copy devs: directory, all you have to do is copy it from your original Workbench disks. ***Paul***

LIVING WITH PAGESETTER3 AND COMPUGRAPHIC FONTS

DTP

I was overjoyed when I saw Jeff's recent description of how to get Compugraphic fonts to work with PageSetter. However my joy was short- lived when I found that it applied only to PageSetter II. Please could you supply similar instructions for us PageSetter^3 users as I would love to be able to make use of the fonts on your cover disks and the Amiga Format subscriber disks. I have an A500+ with two floppy drives.

Clyde Bish
Clyst St Mary, Devon

DTP

I can only use the one Compugraphic font (CGTimes) in PageSetter^3 because I cannot get the program to "find" my other Compugraphic fonts. These are contained in a drawer on the Workbench partition of my Hard Drive. I have used the Intellifont system to install them from the Amiga Shopper cover disks. Jeff did an idiot's guide to installing Compugraphic fonts for PageSetter II, could he do a follow-up piece for PageSetter^3 please? I have an A1200.

Richard I'Anson
Haxby, Yorks

Richard, I'll get to Hard Drive stuff in a moment, but first let me prepare the ground by dealing with the root cause of Clyde's floppy problem.

Gold Disk's floppy set-up procedure for PageSetter^3 is atrocious, and I do not use the word lightly. At the time PageSetter^3 was released there were four different versions of Workbench in popular use (now there are five!) and each version of Workbench requires a different set-up for floppies because the disk structure of each version of Workbench is very different.

Gold Disk opted for the lazy solution, they did just enough to enable floppy users of all persuasions to get it running, leaving inexperienced users – the very users PageSetter^3 is aimed at – high and dry when it came to setting any standard Workbench preferences and using anything other than the supplied bitmap fonts and single CGTimes Compugraphic font.

I have spent a lot of time attempting to work out how to organise PageSetter^3 on floppies for the various versions of Workbench. It's absolute murder. Unacceptable compromises have to made in all cases, and I have now given up the ghost. I don't know how anyone manages to do anything much with PageSetter^3 when running it from floppies. The bottom line – and the same is true of much modern Amiga software, never mind what it says on the box – is that PageSetter^3 is really too big a package to run properly from floppy.

Luckily, organising extra Compugraphic font disks for use with PageSetter^3 is not too bad. First make a duplicate of the PS^{3}Fonts disk and make sure the duplicate is named PS^{3}Fonts, just like the original. As is stands there is very little space free on this disk, so to add Compugraphic fonts to the system we first have to make some room. It is unlikely that you will want to use the bitmap fonts on that disk (because they produce horribly jaggy output), so let's delete them.

Use a directory manager to enter the PS^{3}Fonts:Fonts drawer (on the duplicate) and delete all the drawers and files in that Fonts drawer, but do not delete the Fonts drawer itself. If you don't own a directory manager then use the following AmigaDos command (the superscript 3 character is typed by holding down the Alt key and pressing the 3 key):

```
Delete PS3Fonts:Fonts/#? ALL
```

That will create over 400k of free space. If you need more space, then you may delete the article editor and its support files, but keep in mind that you will not then be able to use the article editor when using this PS^{3}Fonts disk with PageSetter^3.

The files that need deleting to clear the article editor are: AE and AE.info (the article editor itself); TransSpell and TransSpell.info (the spelling checker); and pfsf6b90k (the dictionary). You can also delete the disk.info file. Clearing out the PS^{3}Fonts:Fonts drawer and article editor will create over 700K of free space on the PS^{3}Fonts disk.

OK, so far so good. Clyde, I'll get to actually installing new Compugraphic fonts shortly, but as this is essentially the same procedure for both you and Richard, I'll first explain how PageSetter^3 works when running from a Hard Drive. A lot of what follows, Clyde, you may still find of use even though you don't own a Hard Drive.

When you install PageSetter^3 using the Hard_Drive_Installation icon on the PS^{3}Install disk, you are first asked which parts of the package you want to install, then various questions concerning where exactly you would like those parts to be installed.

First it asks where the PageSetter^3 program should be installed. Using the Show Drives gadget if necessary, you first select a device (or partition if you prefer that term). You may then select a drawer that already exists on this device – a drawer named DTP, say. Alternatively you may use the Make New Drawer gadget to create a new drawer – a drawer named PS^3, say.

The PageSetter^3 program will be copied directly into the device or drawer you select. In other words, it will not first create its own drawer and then install PageSetter^3 into that drawer. So for the purposes of this example, let's say your device is named Work and you have created a new drawer called PS^3, so that PageSetter^3 will be installed to Work:PS^3/PageSetter – PageSetter being the name of the executable program file, PS^3 being the name of the drawer it is in, Work being the name of the device.

Next you are asked where to install the FAIS Loader. The installation program suggests

Work:PS^3, and this will do just fine. Now it wants to know where the Compugraphic fonts should go, and again the installation program suggests Work:PS^3. This we want to change because we want to keep our PageSetter^3 Compugraphic fonts separate from all the other bits and pieces.

So we select the Make New Drawer gadget and call our new drawer CGFonts. (Call it something else if you prefer, it's totally up to you.) At this point the installation program informs you that it wants to add an assign to your s:startup-sequence and requests your permission to proceed, which you gladly give. (In actual fact it will add the assign to the s:user-startup file.) The lines it adds will look like this:

```
;BEGIN PageSetter
Assign CGFonts: "Work:PS3/CGFonts"
;END PageSetter
```

The first and third lines are just comments, the important one is line 2. Parts of PageSetter^3 will automatically look in the CGFonts: logical device, and only in the CGFonts: logical device, for certain files. If at some later stage you decide to move the PS^3 drawer somewhere else (or rename it), then in the user-startup CGFonts: will still be "pointing" at Work:PS^3/CGFonts, which drawer may not now exist, so certain parts of PageSetter^3 will fail – not crash or report an error necessarily, but some options may simply not work properly. So if you move or rename the PS^3 drawer, make sure you adjust the path (the bit between quotes) in the PageSetter^3 assign in the s:user-startup file to reflect the new path to the CGFonts drawer.

Back to the installation. Next you are asked where the article editor, graphics editor, tutorial files, font manager and clip art should go. By all means make new drawers for the tutorial files and clip art – anywhere you like – but I recommend you accept the installation program's suggested locations for the article editor (in the Work:PS^3/CGFonts drawer, for some strange reason), and the graphics editor and font manager (in Work:PS^3).

Several new drawers are created automatically in the Work:PS^3 drawer, and several files are automatically installed to these new drawers. Apart from swapping disks, it's all automatic from here on in, but something important is happening behind the scenes.

Every time a new drawer is automatically created and the relevant files are installed into it, an "initialisation" file named PageSetter.INI is updated and written into the SYS:S drawer (or the S: logical device, to put it another way). This file contains the paths to various parts of the PageSetter^3 system, as installed by the installation program. For this example the file would look like this:

```
PR  Work:PS3/Data
PD  Work:PS3
PP  Work:PS3
TF  Work:PS3/filters
PNT Work:PS3/GrE
FE  Work:PS3/CGFonts
AE  Work:PS3/CGFonts
```

Upon running PageSetter^3, this file is read by the program so that it knows where the various bits and bobs are. (Clyde, you'll find this file in the root directory of your PS^{3}Page disk because the floppy startup-sequence on PS^{3}Page assigns S: to that path.) For example, the path after TF is where the text filters have been installed, the path after PNT is where the graphics editor has been installed.

Very importantly, the path after FE is where the "font engine" has been installed, which is various system files specific to PageSetter^3, and these are kept in the same drawer as the Compugraphic fonts. If you look in your Work:PS^3/CGFonts drawer (PS^{3}Fonts:CGFonts for Clyde) you'll see files like if.ss, if.fnt, cg.chardata, and others, as well as the "fontname.dat", "fontname.metric" and "fontname.lib" files of the Compugraphic fonts themselves.

As with the assign earlier on, if you later move the PS^3 drawer somewhere else (or rename it) you should adjust the paths in the S:PageSetter.INI file accordingly. It is a plain ASCII text file that can be edited with any text editor, or with the AmigaDOS Ed command.

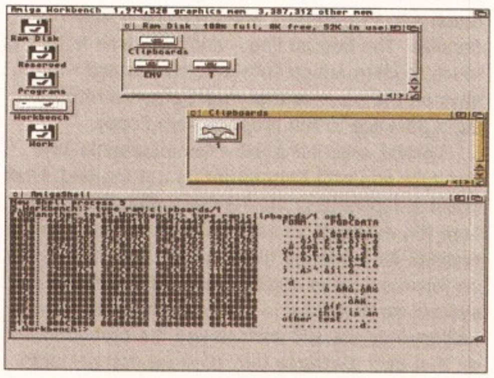
Now then. Installing new fonts. For PostScript (Adobe) Type 1 fonts this is easy. You simply run the font manager program, select the Type 1 font's PFB file in the left-hand window and hit the gadget at top left (the bit of paper pointing at the other bit of paper – it probably made perfect sense to the programmer). The font will then be converted from PostScript Type 1 format to Compugraphic format and saved to the CGFonts: logical device (Work:PS^3/CGFonts in our Hard Drive example, PS^{3}Fonts:CGFonts for Clyde and his floppies).

However, to install a Type 1 font you must have both the PFB file and the AFM file for that font – PFB and AFM being the filename extensions of the files; they stand for Printer Font Binary (that's the actual font description) and Adobe Font Metrics (the character spacing and kerning information). If you've got the PFB but not the AFM, then you are stuffed as far as the PageSetter^3 font manager is concerned. Either contact a font vendor or buy TypeSmith.

To install Compugraphic fonts you simply copy – using the standard AmigaDos Copy command or by dragging icons or with a directory manager, but not with the Workbench Intellifont program – simply copy the "fontname.dat", "fontname.metric" and "fontname.lib" files into the CGFonts: logical device. (The CGFonts drawer on your PS^{3}Fonts disk, Clyde.) Each Compugraphic font comprises the three files with those filename extensions; two out of three isn't good enough, you must have all three in the CGFonts: logical device else PageStream^3 will not be able to use them. And here comes the problem.

As well as the three font files for each Compugraphic font being in CGFonts:, one of the "font engine" system files (if.fnt) needs to be updated to include the names of the newly added fonts. The font manager program does this after converting from PostScript Type 1 to Compugraphic format, but the font manager cannot be used to install Compugraphic fonts.

Gold Disk wrote a program named CG_Update



Temporary clipboard files can be stored as IFF files when a program terminates. It's possible to view the contents of these using the AmigaDOS Type command with the opt h option!

which updates the if.fnt file according to the Compugraphic fonts it finds in the CGFonts: logical device, but it wasn't included with PageSetter^3. (At least it wasn't with mine.) If the if.fnt file is not updated, PageSetter^3 cannot use the newly added Compugraphic fonts. CG_Update is a copyrighted Gold Disk program, but I think you'll find that some PD libraries and font vendors have obtained permission to include it on their disks.

Once you've got hold of CG_Update, all you have to do is double click that icon after copying the three font files for each new Compugraphic font into the CGFonts: logical device. This will update the if.fnt file, and PageSetter^3 will now be able to use the new fonts – although you'll have to quit and restart PageSetter^3 if you've got it running at the time because the program only reads the contents of CGFonts: once upon loading. (Once upon loading there were three little bears... but that's another story).

You may have gathered from all this that PageSetter^3 does not use the Workbench Compugraphic font system, it employs its own proprietary system, so if you want to install a Compugraphic font for Workbench as well as for PageSetter^3 you'll have to do the above and then use the Workbench Intellifont program to install it for use with Workbench and programs that use the Workbench Compugraphic font system. Yup, Richard, this means you have to install and store the same font twice on your Hard Drive.

And Clyde, you are limited to however many Compugraphic fonts you can fit on to a single PS^{3}Fonts disk, which will be up to about seven or eight depending on the size of the fonts, so you'll have to organise different PS^{3}Fonts disks for different jobs. Because of the way PageSetter^3 works there is no way to simply stick a new PS^{3}Fonts disk in a drive while PageSetter^3 is running and load a new font; all the fonts you require must be on the first PS^{3}Fonts disk you stick in a drive after running PageSetter^3. ***Jeff***

UNSUCCESSFUL VMM



Having received issue 44 of AS, I looked forward to using VMM, as I have an MMU installed. After unpacking to RAM, I tried to run install VMM, only to get the message "unable to open your tool 'Installer'". I tried various assigns without any success. All Commodore Installer programs on other disks seem to work satisfactorily.

My configuration is as follows: a 1200 with a 340Mb Hard Drive, a Viper 28MHz 030 and MMU accelerator with 4Mb of RAM fitted.

When I checked the MMU with Sysinfo, it said it was not in use. Having no previous knowledge of MMU systems, does this mean that the installation actually turns the MMU on. Hoping you can shed light on the subject, as VMM appears to be a great alternative to Gigamem.

Ralph Smith
Liverpool

Before I answer your question about VMM, let me congratulate you on your choice of the Viper board. MMUs are designed to work in the background and only leap into action when needed. Your board is more than capable of running the excellent VMM.

Back to your first question, I suspect that the programs that have already installed themselves successfully on your system may have Installer on their installation disk. The VMM installation script looks for Installer in your C: directory. You can tell this by selecting the InstallVMM icon and pressing

right-Amiga <i>. This will bring up the icon's information, including its default tool, in this case Installer. To remedy your problem, you can either copy Installer to your C: directory or change the default tool. For example, if your copy of installer is located in your Workbench tools directory you would change your default tool to:

```
Workbench:tools/Installer
```

This problem is often encountered when trying to view a text or image file by double-clicking. It can be solved in the same way, If you don't have the default viewer, change the default tool to a program that supports that same file type which you have already installed in your system. ***Graeme***

EMPTY RAM DIRECTORIES

Can you please clear up this mystery for me. I understand about the purpose of the RAM disk's Env drawer, but why are the T and Clipboard directories set up – they always seem to be permanently empty?

Jim Wilkins
East Cowes, Isle of White

The RAM disk T directory is just a convenience directory for applications wishing to write temporary files and whether or not it gets used depends on what applications programs you are using. Programs actually write to the AmigaDOS 'logical device' T: but, since with a normal startup sequence this is assigned to the directory ram:T, the files usually end up being placed in ram:T.

When looking for these files two things that need to be remembered: Firstly, because an application will not normally create icons for any temporary files it produces, you will only see these files by listing them from the shell (or using the 'Show All Files' option available on the more recent Workbenches).

Secondly, well behaved applications programs will delete all their temporary files before they terminate, so in order to see them at all you need to look for any files before you quit the program.

The RAM disk Clipboard draw is another convenience directory and. as the name suggests, this one is used to store clipboard data. Usually a program's clipboard material will be handled via memory areas controlled by the clipboard device. If however the clipboard device is closed whilst there is still valid clip data present then the clipboard device will write that clip data to a file storing it in the directory assigned to CLIP: (another AmigaDOS logical device name). CLIP::, as you've now probably guessed, is conventionally assigned to the RAM disk Clipboard directory.

To see this directory in action try this experiment: Open an application that supports clipboard cut&paste operations (such as a text editor or paint program). Create some data, copy it to the clipboard and then quit the program. You ought to then find an IFF file representing your clip in the ram:Clipboard drawer! ***Paul***

BBS BACKING

I am in desperate need of an answer – please help!

Being the sysop of a fairly popular BBS, I need to do a fair bit of backing up, to which I currently use the Video Backup System. Now this is fairly good and a reliable source of backup, but not exactly fast.

What I really want to use is a 250Mb tape streamer that runs via the parallel port on my A1200. Do you know if there is a parallel streamer system for the A1200? The tape streamer must be parallel and not via the PCMCIA slot or expansion slot as both of these are being used by my RAM and Zappo CD-ROM.

I know of systems on the PC that use the parallel port, so I guess a PC streamer will work on an Amiga, it will just require the correct driver/mount to be utilised. Am I right?

PS. Are most other streamers SCSI? If so would a Viper 030 with SCSI adaptor do the trick?

M. Tillet
Beccles

Although Parallel port disks and tape streamers are relatively common, I'm not aware of any such system for the Amiga. The hardware should be compatible, but I'm not aware of any software that has been written to use it on the Amiga.

Anyway, I don't think a parallel port tape streamer would be a lot faster than the VBS. You should consider upgrading to version 3 of the software, which increases the back-up speed to around 130Mb per hour.

Using a SCSI tape streamer is possible, but once again you will need the requisite software. There are several PD programs available which will work with a SCSI tape streamer (such as TAR or BTNTape), or you could go for a commercial program. The latest versions of both AmiBack and Quarterback will happily work with tape streamer devices. Although we haven't tested the Viper SCSI unit yet, I can't see any reason why this should not work with the software mentioned above and a SCSI tape streamer. ***Richard***

INTERESTING BUGS

I found the Bug Out feature very interesting, though I was surprised to spot an extra bug in the C example you used. In addition to the one you described in the article, the line:if (*string <= 'z' || *string >= 'a') is also bugged – using logical OR rather than an AND means that the test will always succeed.

As a follow-up article, how about a feature on the various debugging tools available, since there wasn't space to deal with them last time? Or alternatively, tell us more about the source code checking utilities that you mentioned. If nothing else, it might give us some ideas and enthusiasm for writing our own.

Andy Stevens
Acklam, Middlesbrough

Well spotted! Which just goes to prove what I said about no program longer than a few lines can ever possibly be guaranteed bug-free first time. This was, out of interest, one of the worries about Reagan's Star-Wars program. Millions of lines of code which could never be fully tested would have been expected to work first time. Hmm.

The line, of course, as you suggested should have read:

```
if (*string >= 'a' && *string <= 'z') *string
= *string - 0x20;
```

It is quite possible that there will be a follow-up to the debugging article, and I will remember to concentrate on how you can use tools to make the job easier. As for the source code checking utilities, I personally find them essential – particularly for assembly language programs. You can write a small C program that checks the source line by line for mistakes. For example, you might have a structure which you always use a0 to index it from, like this:

```
move.l   ln_Name(a0),d0
```

If that was the case, a program could check every instance of references within that structure and warn you if you did not use A0. If you document your code and routines well you can have further fun, for example:

```
; >>> Routine Header ----------------------
; ConvertToUpperCase
;  Inputs:
;     a0 String to be converted (NULL ☛
Terminated)
;
;  Outputs:
;     a0 Points to converted string.
;
;  Registers Corrupted:
;     a0-a1/d0/d4-d5
;ConvertToUpperCase: code...
```

If you used this format for *every* function, you could knock up a small program (in C or ARexx, for example) which checked the registers corrupted line and warned you if it corrupted other ones too. There is a wide range of things like this you can do, but they are all very specific to an individual project. Good luck! ***Toby***

HARD DRIVE FONTING FOR BEGINNERS

I have lots of good disks containing fonts and pictures, which I use with DeluxePaint IV and Scala MM200 on my A1200. I want to place the fonts within a drawer on my Hard Disk (Workbench 6Mb, Work 120Mb), possibly called Fonts, and call each disk say Fonts-Disk-1, Fonts-Disk-2 and so on. Basically, so that when the font requester in DeluxePaint is opened I can type in the name of the disk and use the contents of that disk to compose a title. Similarly with the picture requester for a backdrop for the title.

My efforts so far have been unsuccessful. In the case of fonts the DeluxePaint font requester does not respond to my command – all I can get is the fonts that are present within the DeluxePaint program.

R Anscombe
Basingstoke, Hants

OK, firstly the fonts available from within DeluxePaint will be all the fonts in the standard FONTS: logical device, which will be the drawer named Fonts on your Workbench partition. If the fonts on your fonts disks are bitmapped fonts then all you need do to make them available to DeluxePaint (and any other program) is copy the fonts drawers and associated ".font" files on your disks into that Workbench:Fonts drawer.

However, as your Workbench boot partition is only 6Mb it will be better to install these fonts on the Work partition because it is not a good idea to use up all the space on your boot partition – just in case some program wants to install some extra libraries or whatever. So let's do it your way.

First, create a new drawer on your Work partition (open the Work disk icon and press LeftAmiga-N) and name it Fonts. Open this new Fonts drawer. Now put one of your fonts disks in a drive. (Let's say it is called Fonts-Disk-1.) Drag the Fonts-Disk-1 icon into the Font drawer. Yes, the actual disk icon itself. This will automatically create a new drawer called Fonts-Disk-1 (the name of the disk) inside that Fonts drawer and then copy the entire contents of the disk into this new Fonts-Disk-1 drawer. Repeat this procedure for all the fonts disks you want to copy on to the Hard Drive.

Now create a new drawer on your Work partition and name it Graphics. Open this new graphics drawer, put one of your picture disks in a drive (we'll call it Pictures-1) and drag the Pictures-

1 icon into the Graphics drawer. A new drawer, Pictures-1, will be created inside the Graphics drawer containing the full contents of the Pictures-1 disk. Repeat this procedure for all the picture disks you want to copy on to your Hard Drive.

Now comes the slightly tricky bit. Open a Shell window and type:

```
Ed S:User-Startup
```

This will load a file named User-Startup from the S: logical device (the Workbench:S drawer in your case) into the Amiga's standard text editor. (If no file called S:User-Startup exists, a fresh one will be created and you will be staring at an empty file.) Add the following lines to that file:

```
Assign Fonts-Disk-1: Work:Fonts/Fonts-Disk-1
Assign Fonts-Disk-2: Work:Fonts/Fonts-Disk-2
Assign Pictures-1: Work:Graphics/Pictures-1
Assign Pictures-2: Work:Graphics/Pictures-2
```

This example assumes you have copied just two fonts disks and two picture disks on to your Hard Drive as detailed above. If you have copied more, then add more lines, changing the disk names or numbers accordingly. Take care with your typing, especially with the colons.

When you are finished, save this file (ensuring it is named User-Startup and saved to into the S: logical device) and then quit Ed. Now reboot your Amiga and you will have several new "logical devices" set-up that have names similar to your floppy disk names. In the DeluxePaint font requester, for example, type Fonts-Disk-1: into the Drawer gadget (don't forget the colon on the end) to make the fonts in that logical device available to DeluxePaint. Similarly, to access the picture disks, type Pictures-1: or Pictures-2: or whatever into the Drawer gadget of the Load Picture requester, or alternatively scroll down the <DEV> list and click on those devices in the list. ***Jeff***

DRIVE DILEMMA

BUYING

I am studying for a degree in Construction Management and with the advent of CD-ROM, the university has several packages for us to gain relevant information from.

With limited, printing facilities and University resources, I want my own CD-ROM. Could you advise me whether a Zappo CD-ROM would be better and if there are any PD CDs, or others, that are construction-related. If so, how much are they? Could I use PC CDs? Would they be compatible and could I implement graphics or charts into Final Writer? Basically, is it worth £200+ of my grant?

How would I play the CD32 games with only a joystick? Isn't there an extra ROM Chip somewhere in the CD32 that allows the saving of some games? How will the 1200 cope with this?

Chris Mitchell
Clwyd

I'll start with the easiest question first, I'm afraid there are no Construction-related CD-ROMs that I'm aware of. As to whether you can use PC CDs on the Amiga, the short answer is yes. While you'll be able to read any files or directories on the disc, you'll *not* be able to run any PC software. The only way to run PC software is to buy a PC-emulator and, at present, the only option for 1200-owners is a software emulator, such as PC Task. However, there is an increasing number of conversion programs in the PD world that can handle PC data files, such as images, text and even 3D objects.

If your sole purpose in buying a CD-ROM is to use PC software, then you'd be better off spending your money on something else. CD drives for the 1200 that include CD32-emulation, usually emulate the CD32 controllers by using the keyboards; you can even buy controllers. The emulators can store game positions, but as I've not seen any games that have this function I've not been able to test it out. ***Graeme*** AS

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Your machine:

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A1500 ☐ **A2000** ☐ **A3000** ☐ **A4000** ☐

Approximate age of machine:__________

Kickstart version (displayed at the "insert Workbench" prompt)

1.2 ☐ **1.3** ☐ **2.x** ☐ **3.x** ☐

Workbench revision (written on the Workbench disk)

1.2 ☐ **1.3** ☐ **1.3.2** ☐ **2.04/2.05** ☐ **2.1** ☐ **3.0** ☐

PCB revision (if known). Do not take your machine apart just to look for this! __________

Total memory fitted (see AVAIL in Shell for Workbench 1.3) __________

Chip memory available (see AVAIL in Shell) __________

Agnus chip (if known) __________

Extra drive #1 (3.5in/5.25in) as DF__: Manufacturer __________

Extra drive #2 (3.5in/5.25in) as DF__: Manufacturer __________

Hard disk: ____Mb as DH__: Manufacturer __________

Extra RAM fitted – type, size in Mb and manufacturer __________

Details of any other hardware which could help us to answer your question:

____

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____

Now, use this space to describe your problem, including as much relevant information as possible. Please continue on a separate sheet if necessary.

____

AS 45

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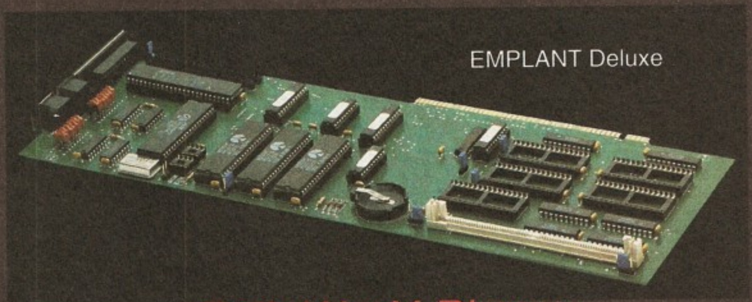
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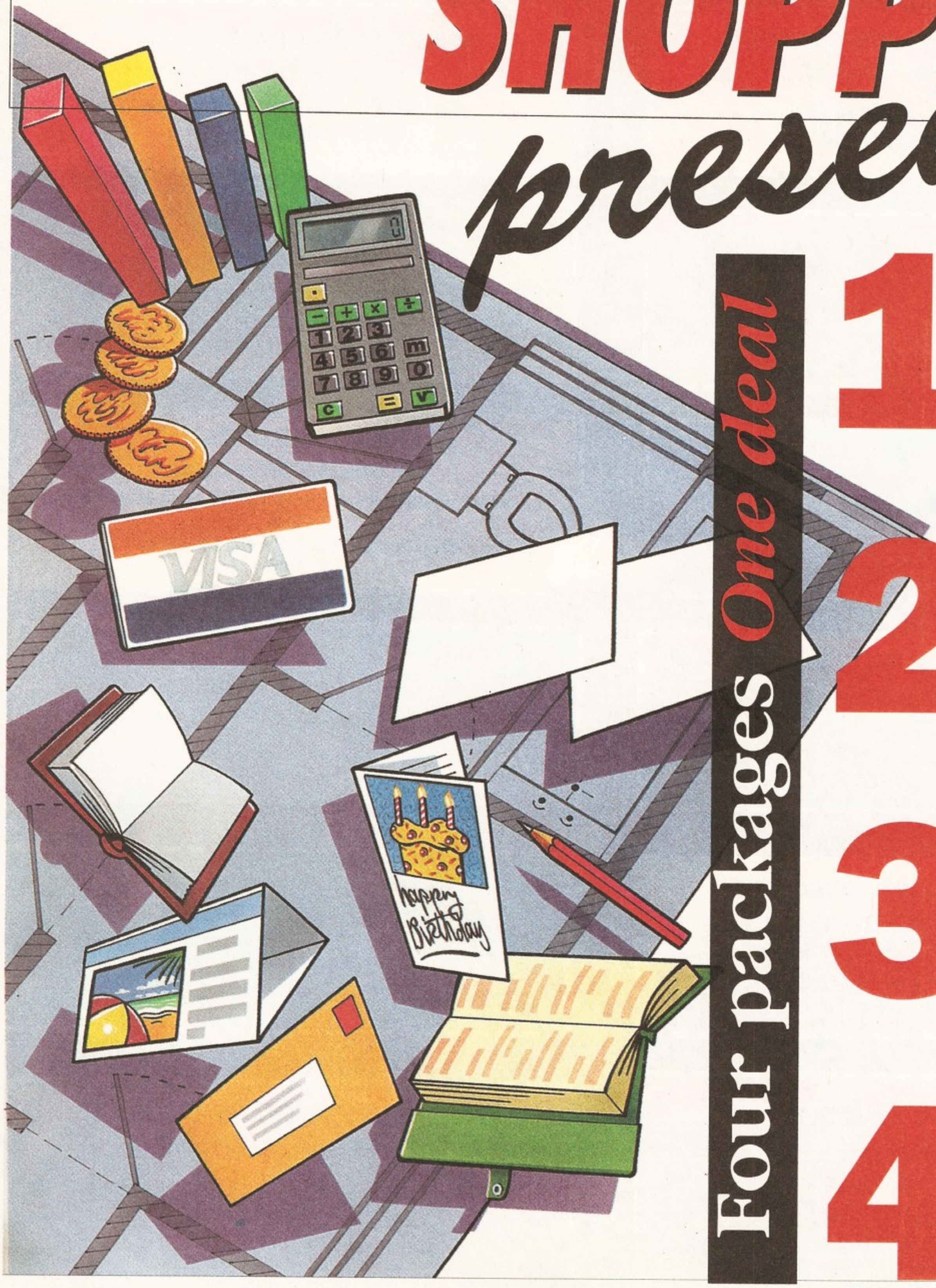
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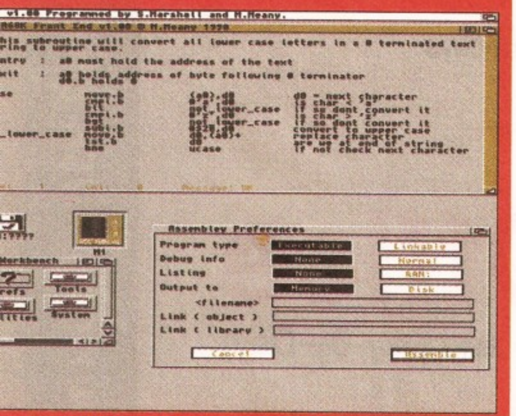
This month Gary Whiteley, Richard Baguley, Paul Overaa and Graeme Sandiford cast their eyes over a fine selection of Amiga products.

We've got a mixed bunch this month – and that's just the reviewers! Paul Overaa is taking a look at the latest version of the ACC Programming Manual. Gary Whiteley checks out some Alternative Textures. Richard Baguley finds out the true story behind Commodore's demise and I'll be looking at a couple of juicy CDs and an Amiga-specific comms book.

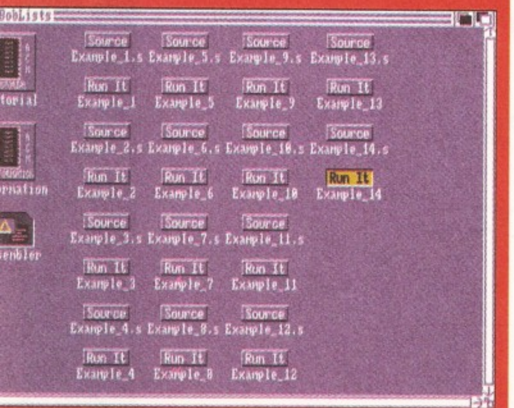
THE ACC HARDWARE PROGRAMMING MANUAL

Amiganuts PD Library

Fancy seeing a few of the tricks that the less orthodox Amiga coders use? Paul Overaa has been checking out an offering which may be just what you need.



The ACC hardware programming manual disks include an easy-to-use A68k front end!



There are plenty of examples to keep you busy during the winter months!

Assembly language programmers on the Amiga tend to fall into two main categories. Firstly, there are coders who program at the 680x0 level, but who understand, and work within, the normal Amiga multi-tasking and Intuition-based environment guidelines laid down by Commodore. Secondly, there are the games/demo writers who throw all the accepted O/S conventions out of the window and hit the hardware directly in order to achieve maximum speed from the machine. Both methods have their place, but it is the latter individuals, rather than the former, who will appreciate this ACC (Amiga Coders Club) manual.

The material is disk-based and now consists of seven disks of tutorial and reference material along with a great many code examples in both source and runable forms. The package contains everything needed to assemble, link, and run the example programs including a nicely written front end editor called ACC which makes use of Charlie Gibb's A68k Assembler.

The manual, essentially just a collection of text files, offers a reasonably useful beginners section containing details of 680x0 instruction types, assembler pseudo-ops and so on, along with doc files for various tools provided. The tutorials themselves cover things like copper list programming, interrupts, audio coding, mouse button and joystick reading with each topic including both source and runable examples.

The bad news is that although many programs are surprisingly short, the material is not well suited to those taking their first steps with 680x0 assembly language. In fact, most of the discussions will leave the average newcomer stone cold! Those who will get the most from these disk are coders who already know more than a little about conventional low-level Amiga coding, but want to see some of the more 'unorthodox' tricks that some experienced coders use.

The example code completely ignores standard Commodore programming guidelines (disabling the normal Amiga multi-tasking environment, by-passing the Exec-based interrupt arrangements and so on). But let's get one thing straight – this, to a large extent, is exactly what hitting the hardware is all about and you only have to look at some of the demos to see that the results, at times, can be stunningly effective.

Now, I'm duty bound to point out that this sort of programming is not going to be everybody's cup-of-tea, especially since it is nigh-on impossible to incorporate these sorts of coding tricks into the normal Intuition environment. In fact, if your main interests are in learning how to open windows and use gadgets and menus in Assembly language these tutorials will be of no use whatsoever. On the other hand, if you are past the beginner's stages of 680x0 coding, and are intrigued by the tricks that demo writers and games coders use, then these disks will provide you with both tutorial help and plenty of food for thought! ***Paul***



This is just a small selection of images that are contained on Alternative Textures 3.

Product: ACC Hardware Programming Manual
Price: £24.99 for the 7 disk set.
Supplier: Amiganuts PD Library
Tel: 0703-397727

Overall: 78%

TEXTURES VOLUME 3

Alternative Image

Once again Alternative Image have collected together another set of bitmaps for Amiga animators, DTV producers, 3D constructors and graphics persons to use at their leisure for backdrops, wraps and illustrations. Unlike the two previous sets (which were in 24-bit, 8-bit and HAM formats), all the images in Textures 3 are JPEG compressed, which means that you get a lot more images for your money, but also that you'll need a way of reading the JPEGs and converting them to a format suitable for your requirements.

But nowadays this isn't a major problem, as a

wide range of programs, from PD to commercial, now include JPEG conversion as standard. If you've got ADPro, ImageFX or Rend24 (among others) then any of the images in Textures 3 will be available to you. If you don't have any JPEG-capable software then you're probably not that serious about graphics anyway, so you'll not be that interested in Textures 3.

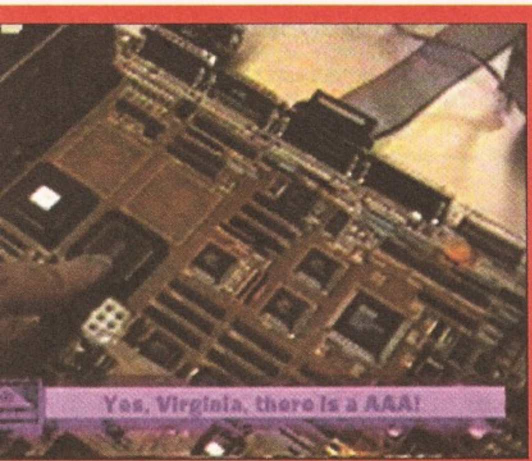
Textures Volume 3 is a 12 disk(!) set featuring a wide range of images – from 3D-generated textures to some of Henri Bujko's more interesting holiday snaps. Most of the JPEGs are supplied in 768 x 576 24-bit resolution (i.e. in full PAL video overscan), though some are smaller. A JPEG viewer is supplied, though it cannot be used to convert JPEGed images into standard IFF24 files.

Having looked at many of the 100 plus images on the disk I can only say that, almost without exception, they are of extremely high quality – especially the skies and organic images. As you would expect, Skies are a varied selection of sky shots taken in a variety of environments and lighting conditions. The Organic images are mainly photographs of plants and vegetation – most of which (like skies) could be used for backdrops for video titling and other purposes.

The same goes for the Land, People, Raytrace and Architectural shots. Of course there's no reason why you couldn't wrap some of these images onto 3D objects, though I can't see the attraction of surface mapping an object with a photo of two Moroccan women selling cucumbers! But I *can* see that the Wood, Stone, Metals, Water and Map (of the world and major continents) images could be very useful for wrapping and surface mapping, and how they would also make good backdrops for graphics and DTV production (as well as DTP work).

There is also a miscellaneous bag of various bits and pieces, including a computer circuit, the innards of a clock and a cat on a bedspread.One comment I must make is that whilst the mini-images supplied are very useful (they show all the images in each category miniaturised into a single screen), I would have preferred them to be gathered together in one place, rather than scattered across the set of disks. That way, choosing the image you require would be some much easier.

A word of warning – 768 x 576 24-bit images require a lot of memory. This collection is aimed more towards professional users than hobbyists, though if you use a converter such as ADPro it is possible to scale and reformat the images into



Proof positive that the AAA Chip set does exist in this still from Dave Haynie's video "Deathbed Vigil".



This fearsome, but extinct, fellow can be found on Weird Science's Clip Art CD-ROM – along with plants, airplanes, cars and more.

something which might be more suited to your setup – assuming you have enough memory to run ADPro in the first place.

Alternative Image's Textures Volume 3 contains a very wide range of high-quality images which you may well find useful if you have a need for such things. With over 100 images, that's around 50p a picture – copyright free. ***Gary***

Product:	**Alternative Image's Textures Volume 3**
Price:	**£51.50 (inc P&P)**
Supplier:	**Alternative Image**
Tel:	**0533 440041**

Overall Rating: 85%

DIGITAL ANGST

Almathera

If the name Dave Haynie doesn't mean anything to you, check your Amiga's motherboard. Shortly before he left Commodore, he took a look around the offices of Commodore in Pennsylvania with a video camera perched on his shoulder. This video is the result of this expedition. It gives you a fascinating glimpse into the beast that is Commodore, including a fleeting glimpse of the first versions of the AAA chipset.

Commodore seemed to be a rather depressing place when Dave was filming: empty warehouses, empty offices and a few despondent-looking engineers wandering around the place. There is one piece that sums the whole thing up: Dave is looking around the chip design section of Commodore, and the place is deserted. However, he comes across somebody still working. "Gee", says Dave, "there's somebody still working here". "Actually", says the Chip Designer, "this is some stuff for my new job".

The second section of the video was filmed at the Commodore Deathbed Vigil, a party organised by ex-Commodore employees the day the news of the liquidation broke. The beer appears to have flowed somewhat freely at this particular event, and this is where the warning of "this video contains scenes of graphic violence and bad language" comes from. Especially from the scene where Dave asks the now redundant Commodorians what they think of Mehdi Ali (the ex-chairman of Commodore International). Later on in the evening, the somewhat drunken people indulge in a keyboard smashing ritual.

Great camerawork it ain't, but it's very interesting nonetheless. If you want to meet the people whose names are inscribed on your motherboard or find out why several Commodore staff decided to dress up as Lemmings at a developers' convention, this video could be of interest.

Product:	**The Deathbed Vigil and other tales of digital angst**
Price:	**£25.95**
Supplier:	**Almathera**
Tel:	**081 687 0040**

Product rating: 75%

WEIRD SCIENCE CLIP ART CD

17 Bit Software

It's typical – you wait months for a decent CD-ROM title, then a whole bunch of them come along at once.

The collection actually contains a number of different file types, some are colour bitmaps, others greyscale and some are structured clip art. The bitmap images are stored in IFF format while the structured ones are in ProDraw, PageStream and EPS formats. The PC images are stored as IMG and PrintShop for bitmaps and CorelDraw files for structured images.

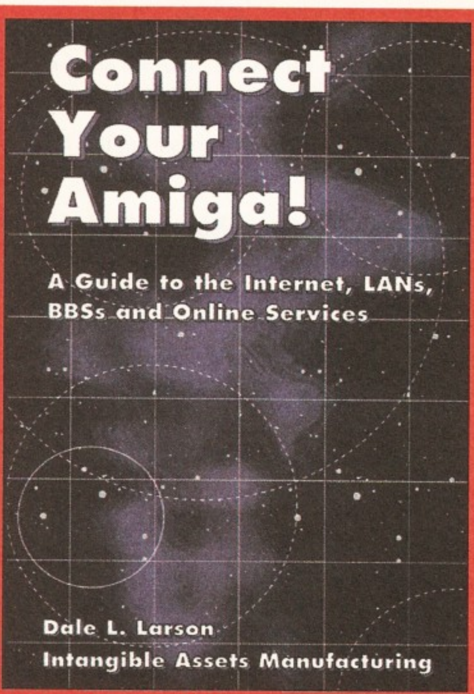
Each filetype has its own directory and within that sub-directories for topic. So, if you were looking for a colour picture of a sable-tooth tiger you would first go to the Colour directory and then to the Dinosaur folder. (But Sabre–Tooth tigers arn't Dinosaurs - *Ed.*)

Of all the directories the colour one contained the best quality images. It's actually quite difficult to tell whether the files are well-scanned images or "hand-drawn" using a paint package. Whatever the method producing them is, they are impressive nonetheless. They cover wide range of topics with several variations on each one. There are directories for birds, cars, dinosaurs, dogs, fish, flowers, fruit, insects, mammals, trees, vegetables and my personal favourite cats. Including a nice picture of a Siamese.

The bitmap directory contains several sub-directories for big-mono, tiny-mono, mono and greyscale images. The mono were, on the whole, very good in terms of quality and the number of subjects that are covered. You'll find images of everything from ArtDeco to Xylophones. The mono clip art is highly detailed and can be very large in size. The initials and motifs directories contain some exquisitely detailed images.

The greyscale directory also had some good quality images. Of particular interest was the silhouette directory, which contained some quite good outlines that could be used effectively for video titling. They cover subjects suitable for such events as weddings, Xmas and sporting activities.

However, the brushes directory is filled with the most pathetically pathetic examples of pathetic artwork I've had the misfortune to come across in a very long time. These images are probably the most unimaginative things I've seen since the BBC stopped showing Terry and June. Somebody obviously just sat down with a copy of DPaint and knocked out as many small images as possible in an afternoon. The majority are just messages written in simple, and quite simply naff,



Want to find out about comms, but are afraid to ask? "Connect Your Amiga" is a book that can tell you all you need to know.

colour fonts. There are also some poorly hand-drawn pictures that most five-year olds would ashamed to admit to having drawn.

Aside from this dismal directory, the overall content of this disc is actually quite good. After looking at some of the other clip art CDs that are available, I was expecting a lot worse. What I found instead, was pretty good compilation with plenty of variety and some high-quality images. For just under £10 the disc is great value for money, even if some of images are intended for use on a PC.

Product: **Weird Science Clip Art CD-ROM**
Price: **£9.99**
Supplier: **17 Bit software**
Tel: **0924 366982**

Overall Rating 83%

CONNECT YOUR AMIGA!

Almathera

The Internet is kinda like this big huge network of computers – what, you know that already? I don't know, I remember the halcyon days of comms, when only nice boring people were into all this "computers as a communication medium" malarky. With all media coverage that the Net is getting, all manner of people are getting into comms. I mean, there are normal people with neither beard or spectacles talking about "jacking into the Net", "joining the information super-highway" and entering into "Cyberspace".

However, once you get beyond all the trendy-speak, you are going to have to either learn about communications software and hardware, or pay somebody else large sums of money. However, finding a good book that deals with the Amiga specifically is not easy. Dale L. Larson and Intangible Assets Manufacturing have just released a new Amiga-specific book all about comms and the Internet. The title aims to provide the reader with enough information for them to get on-line and be able to benefit fully from the avenues that will be opened.

Interestingly, the majority of book was actually produced using an Amiga and the author was one of the engineers in Commodore's Amiga Networking Group.

The first section of the book is dedicated to providing an overview of the different types of networks there are. It starts off by explaining how BBSs work and then moves onto LANs (Large Area Network) and finally the Internet. This section also explains some the more general things about comms, such as modems, software, uploading and downloading files, Faxes, e-mail and file compression.

The following sections then go on to cover these and other topics in more detail. Part 2 discusses the software you will need to get your Amiga on-line. This includes utilities for archiving files, off-line readers such as AmiQWK and Thor. It also covers various games that can be played on-line and provides useful advice on buying and using modems.

Part 3 deals with Amiga LANs. It covers all the options from simple Parnet networks right through to installing ethernet cards. It starts off by examining some of the ethernet options that are currently available for the Amiga. It explores the alternative for each model such as PCMCIA interfaces for the 1200 and Hydra cards for the "big box" machines. This section briefly explains some of the software you need.

The final part of this book deals with the Amiga on the Internet. As well as how to get on-line it also gives handy hints on what to look out for when selecting an Internet service provider. It also explains the ins-and-outs of the various protocols used on the Internet and the software you'll need. The book also provides a list of Internet providers and sites that will be of interest to Amiga-owners.

The book is filled with plenty of information and, as you would expect, Mr. Larson certainly knows his stuff. The style of the copy is both informative and pleasantly easy to follow.

Product: **Connect Your Amiga**
Price: **19.95**
Supplier: **Almathera**
Tel: **081-687 0040**

Overall Rating 88%

FRESH FISH VOLUME 7 (NOV-DEC 94)

PD Soft

This is more than just another CD-ROM, indeed it's more than another excellent Fresh Fish CD-ROM. You see, this disc was given at the Computer '94 show in Cologne – by Fred Fish himself.

Fresh Fish 7 adopts the same structure as its predecessors, with directories for tools, useful programs, GNU files and BBS-ready files. The BBS directory contains archived files and a list of the programs that are contained on the disc. This is a particularly useful directory as a large number of the people who buy the CD-ROMs will be running BBSs that will allow their callers to access the disc's contents.

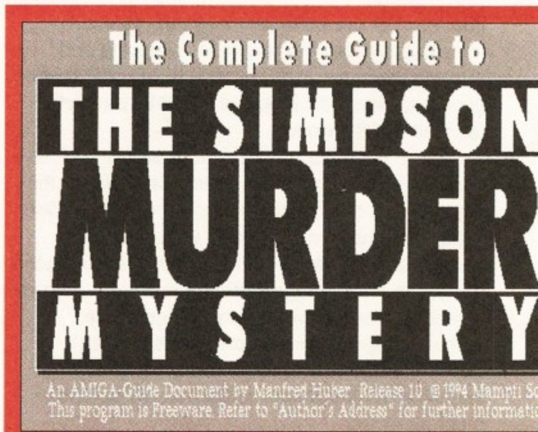
Speaking of useful things, the Useful directory contains some, erm, useful files. Among them you'll find some short reviews of hardware and software produced by a USENET newsgroup. There are also some useful system files such as hard to find Libs, DataTypes, Handlers, Dev files and even some programs that can be placed in your C: directory.

I found an amusing review of some Amiga magazines, including ourselves. Other funny reviews include some April-fool joke reviews such as one of a Kickstart 1.3 ROM upgrade Chip.

The New directory is where you'll find all of the new software that Fred has collated. This directory is divided into sub-directories that contains files and programs for business, graphics, communication, pictures, text, utilities and other types of software.

The pictures directory contents were a bit of a surprise; all the usual ray-traced images are there, but along with these images are some JPEGged underwater photos. The pictures (which I suspect were taken by a gentleman named Russ Dick) are of fish, coral and other nautical scenery. The pictures are colour and clear – they're nice to look at and make very relaxing Workbench backdrops. There is also a 24-bit comic. This is basically a series of rendered images with captions featuring two characters created by Bill Graham.

The business directory contains some database programs, an invoicer, a demonstration version of TurboCalc and even a comic book manager.



While the controversy surrounding the O J Simpson trial continues, Fresh Fish Vol.7 gives you the chance to make up your own mind.

Perhaps one of the best things in having a CD-ROM full of data is that it can give you a feeling of exploration, especially when you find some hidden gems. One such gem that I found was a hypertext file of the recent O J Simpson trial complete with samples and pictures. The rest of the disc is up to the usual excellent standard that we've come to expect from Fred Fish. This is an excellent couple of disks and is well worth a look, especially for people who run a BBS.

Product: **Fresh Fish Vol.7**
Price: **£19.99**
Supplier: **PD Soft**
Tel: **0702 466933**

Overall Rating 87% AS

This month Davey Winder investigates Email and takes a look at cyborgs (that's cyber-organisations, not Metal Mickey on LSD), asking in his best Beastie Boys voice "do you have to fight for your right to, err, go surfing".

Net knights in shining armour

It's all too easy with the recent explosion in the growth of comms to take it all for granted, after all nothing can stop you using it, can it? Well it doesn't pay to just sit back and assume that all will be OK for ever more, you only have to take a quick look at the "popular press" for evidence of that. How many times do you see comms, the Internet and BBSs mentioned for what good they bring to society – not that often, huh?

Now ask yourself how many times you see the same services accused of being dens of depravity, on-line pornography infiltrating every school, hackers stealing your secrets, mad professors spreading viruses, and dangerous subversive groups plotting the downfall of democracy, bit of a different story isn't it? But never fear, for there are forces out there who are actively fighting to protect your rights as users of the new communications technologies. However, they need your help if they are to succeed. Read on to find out who they are and how you can help them to help yourselves.

THE COMMUNITY

The Computer Communicators' Association (CCA), or CommUnity as most people know it, was established a couple of years ago in response to a very real threat to BBSs in the UK. The threat came from the likes of FAST (the Federation Against Software Theft) and ELSPA (the European Leisure Software Publishers Association) together with the backing of an MP or two.

These organisations had decided, largely without cause, that BBSs were the basis of a large amount of software piracy and hardcore pornography. In order to reduce these perceived activities they were proposing to get legislation passed through Parliament that would enforce the licensing of Bulletin Board Services in the UK. Of course, as most BBSs are run for enjoyment not for profit, this would mean that large numbers of perfectly innocent and useful BBSs would have to close down as they would not be able to afford the annual licensing fees.

The on-line community was outraged with these proposals which were reported, Amiga Shopper being amongst the first publications to pick up on the scandal. The networks were alight with anger and concern about these moves, and a meeting was arranged in London to assure a concerted effort against them. It was here that CommUnity came about, with a committee elected which comprised of representatives from the main on-line networks (and I am proud to be able to say that I was one of the people elected to help get CommUnity up and running).

A meeting between FAST, ELSPA, Emma Nicholson MP, and interested parties from the world of comms managed to ensure that the proposed licensing scheme was scrapped, at least for the time being.

CommUnity is well aware that such threats can emerge at any time, and is doing something to ensure the on-line community always has a voice that will be not only heard but listened to. They publish a regular journal, distributed electronically of course, called CommUnicator, have a Usenet Newsgroup called uk.org.community, and maintain a presence on many BBSs through the community echo.

Here are the main aims of the Computer Communicators' Association:

1. To maintain and connect a membership which shares a common concern that access to technology, information, and communication should be as freely available as possible.

2. To raise public awareness about important issues and opportunities arising from ongoing rapid advances in computer-based communications media.

3. To monitor and inform the press and media of computer-based communications, responding to mis-information or prejudice with a coherent voice.

4. To develop among policy makers a better understanding of the issues underlying free and open telecommunications, and support legal and structural approaches which ease the assimilation of new technologies by society, and maintain open access to them.

5. To support litigation in the public interest to preserve, protect, and extend civil rights within the realm of computing and telecommunications technology.

6. To work with agencies and individuals who share our interest in the development of computer-based communications.

7. To encourage and support the development of new tools which ease access to computer-based telecommunications.


CommUnicator

The Electronic Magazine of CommUnity, the Computer Communicators' Association

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InterNet: nhardy@arkham.demon.co.uk

Regular team: Malcolm Arnold
Jim Trash
Oliver Clarke

The CommUnicator is the electronic journal of CommUnity, and a damn good read it is!

WHAT CAN YOU DO TO HELP?

That's the easy bit, if you want to help CommUnity to safeguard the comms world that you value so greatly then all you have to do is give them your support. The more people that support the organisation, the louder and stronger voice it will have. Here's how you can give your support:

- Participate in the uk.org.community Usenet Newsgroup.
- Participate in the community echo on Fidonet Participate in the community conference on CIX.
- Become a member of CommUnity by sending a cheque for £10.00 (£5.00 if you are unemployed or a student) made payable to "CommUnity" to: CommUnity 89 Mayfair Avenue Worcester Park Surrey KT4 7SJ.

Ensure you enclose a signed letter with the following details: name, postal address, email address, and permission to store this information in the CommUnity database.

MAKING THE RIGHT CONNECTION

Although you may like to think that sending email is a pretty simple exercise these days, and you are not wrong, there are still problems that crop up time and time again when trying to send email between different on-line services.

It's all fine and dandy if you are sending a message from one Internet domain to another, but what if you want to reach someone on Fidonet from your Cix account, or get Delphi from CompuServe, or get to CompuServe from anywhere? Read on and you'll find most of the answers.

Internet addresses follow a specific and standard format, which all well and good, but there are a number of on-line systems out there that have only become Internet aware in the last few years. The mailing systems that these services use, and the address formats required, are often alien to the Internet standard and so you have to employ a number of "tricks of the trade" to make the right connection.

To use Wavey's Email Address Book, just make sure you follow the address format given and take a note of any notes I have added, they are there for a reason! When I mention a "user" I mean the name of the mailbox (or account) you are trying to reach, and "domain" refers to the email address (everything after the @ sign basically).

From: BBC Networking Club
To: Internet
Format: user@domain

From : CIX
To: Internet
Format: user@domain

From: CompuServe
To: Internet
Format:
INTERNET:user@domain

From: Delphi
To: Internet
Format: IN%"user@domain"

From: Fidonet
To: Internet
Format: user@domain ON 1:1/31

From: Internet
To: BBC Networking Club
Format: user@bbcnc.org.uk

From: Internet
To: CIX
Format:
user@cix.compulink.co.uk

From: Internet
To: CompuServe
Format:
76543.1234@compuserve.com
NOTE: You must replace the "," in the CompuServe account number with a "." for your mail to get through. CompuServe users are charged for receiving Internet email so can choose an option that refuses to accept it. Therefore you email may never actually get read.

From: Internet
To: Delphi
Format: user@delphi.com

From: Internet
To: Fidonet
Format:
user@1.234.567.fidonet.org
NOTE: The 1.234.567 part of this address should be substituted with the appropriate Fidonet address which would usually take the form of 1:234/567.

You can find out more on-line by FTP from ftp.demon.co.uk/pub/archives/community or by email to community@arkham.demon.co.uk

THE ELECTRONIC FRONTIER FOUNDATION

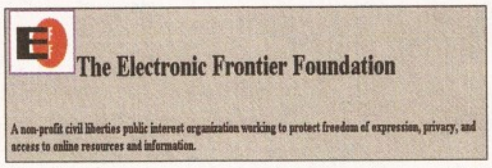
The EFF have been doing much the same as CommUnity, but in the United States, for quite a while now. They were established way back in the mists of time (well it is when you are talking anything Internet) in 1990. They have many of the same aims as CommUnity, and these include ensuring that the "new electronic highways" are "open and accessible to all segments of society".

The EFF have a very strong on-line presence in the States, and they even produce such things as booklets printed on real old-fashioned paper. If you want to find out more about the EFF, or maybe just want to have a browse around their very impressive on-line stores of comms related pictures and documents, then you can find them at the following addresses:

Email eff@eff.org
FTP ftp.eff.org
Usenet comp.org.eff.news
Mailing List eff-request@eff.org
WWW http://www.eff.org

EXPLORING EMAIL

Electronic Mail is a true wonder of the 20th century, it has been revolutionising both business and personal communications for a number of years now and is set to continue to do so for many years to come. I'm not going to insult your intelligence by telling you what Email is but rather some of the things you can do with it and how, that's why this feature is called "exploring email"



The EFF are pioneers when it comes to protecting the rights of on-line users.


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M%P#-/P%W&`#-/P'#&`#-/P'%&0#-/P$7'0#-/P&K)0#-/P'P)@#-/P$R)P#-
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M/P0["P#-/P3Y#P#-/P36!0#-/P3="P#-/P0F#'#-/P2A"0#-/P3C#P#-/P1.
M$`#-/P2-$`#-/P2\$`#-/P06$0#-/P1L$0#-/P10!P#-/P32!P#-/P3($0#-
M/P0X$P#-/P3?$@#-/P2N$P#-/P0U%`#-/P2/%`#-/P11%`#-/P2+%@#-/P0V
M%P#-/P2"%P#-/P2I%P#-/P0;&`#-/P2-&`#-/P0.&0#-/P0:&0#-/P21&0#
M/P0W&@#-/P3$&@#-/P0\&P#-/P1S&P#-/P01"#-/P3_"#-/P3*0#-/P06
M'@#-/P0V'0#-/P1-'0#-/P1$'@#-/P2Q'0#-/P1E'@#-/P2?'@#-/P2U'@#
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M)@#-/P2M)@#-/P3:)@#-/P3F)@#-/P0_)P#-/P1N)P#-/P2+)P#-/P3E)P#
M/P0\*`#-/P2$*`#-/P3&*`#-/P2=*0#-/P04*@#-/P03*0#-/P1X*@#-/P2]
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```


A UUencoded file may not look pretty, but it does travel well through cyberspace!

and not "explaining email".

FIVE THINGS YOU COULD DO WITH EMAIL!

1. Find someone's email address.
To locate someone's email address using email itself, you need to send a message to "mail-server@rtfm.mit.edu" which contains the text "send usenet-addresses/<name>".

Just replace the <name> part with the name, or part of a name, that you are looking for and you will get a mail message back before very long with the result of the search.

If you want to find out more about the Usenet Address Server you can send a message that just says "usenet-addresses/help"

2. Send complete programs over the Internet.
You can convert a binary program, such as a picture or an executable piece of software, using a utility called "UUencode/UUdecode".

Once the binary code (which is 8 bit) has been converted into ASCII (which is 7-bit) the resulting file can be sent as a simple email message. the recipient does, of course, need to decode the file before they can use it though.

3. Participate in on-line discussion groups.
You can subscribe to any number of "mailing lists", free of charge, providing you have an email account. All contributions to that groups discussion will then be sent to you as email, and any replies that you make go back the same way. Everybody who is on the mailing list can take part, and in some case this can be many thousands.

4. FTP files from the Internet using email.
Yes, it's true alright. You can actually get files from the Internet using FTP by email alone. The file will be in UUencoded format, if it is a binary file, and may well be broken down into a number of messages.

First of all though you need to know the exact filename and location of the file concerned, as you can't make an email request for it otherwise (well you can but it won't get you anywhere).

This is accomplished by using ARCHIE by email. For details of how to use these services send a message just saying "help" to ftpmail@doc.ic.ac.uk and you will receive a full set of instructions within a few hours as a rule.

5. Complain about the BBC!
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Dave Winder is the author of "Internet, Modems, And The Whole Comms Thing" and "All You Need To Know About The Internet".

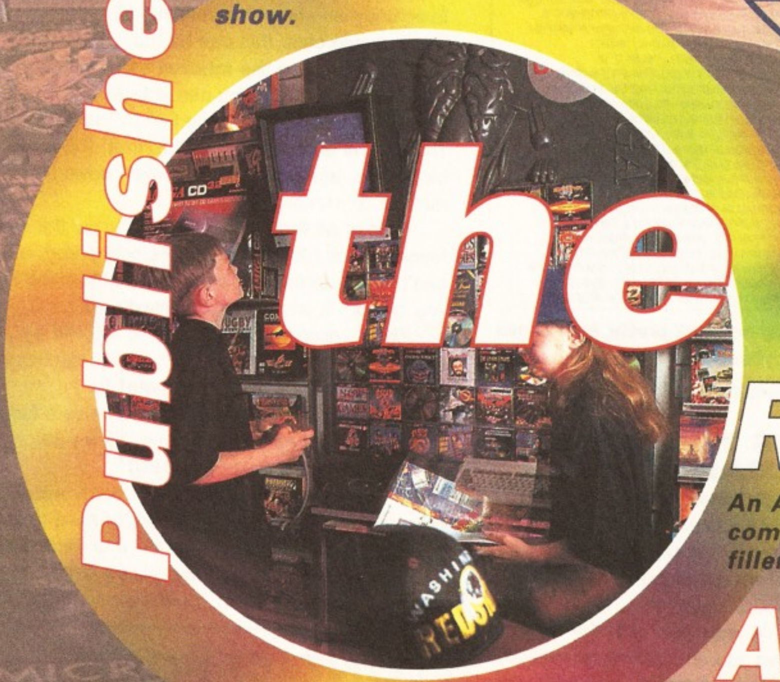
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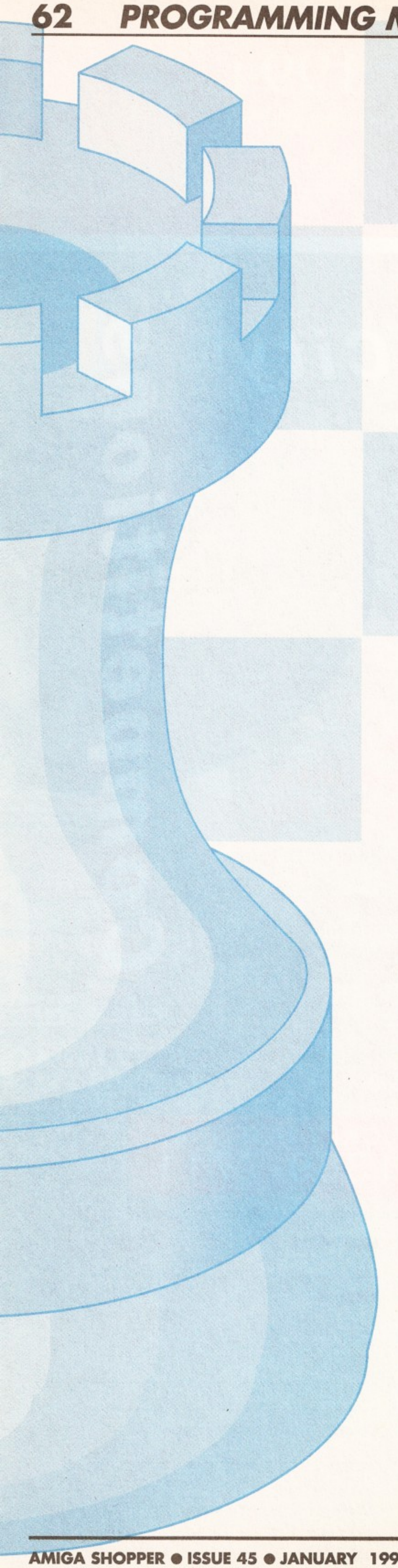
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Making a move

Discover how to write your own chess program. Cliff Ramshaw continues his series, explaining how a player's move is made and how the computer evaluates board positions.

Welcome, chess fans. You'll be glad to know, after all your hard work, that we're very near our very first working version of the game. It'll be far from perfect – lacking in both speed and subtlety – but it *will* play a legal game.

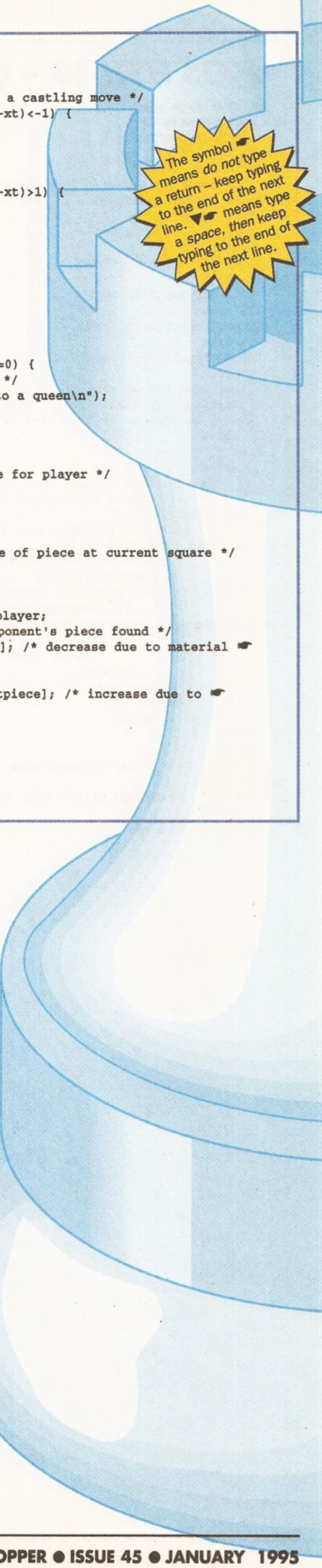
We only need to write three more functions to get things rolling: humanmove(), which accepts and makes the human player's move; evaluate(), which assigns a score to a given board position; and bestmove(), which, by the cunning use of recursion, selects the computer's best move from those available. Because of its length and importance, I'll leave bestmove() until next month, where it can be given the space it deserves.

The most mundane of these functions is humanmove(). With the understanding you've gained over the past few instalments, you should be quite capable of writing this function yourself. Don't worry, though – I've included it in full, but I won't take too much space discussing the fairly elementary code involved.

> *"Initially, we'll be using a very simple evaluation strategy, which we'll improve on in a future instalment."*

The function modifies the board array (which is globally available) directly, so it doesn't return any value. It doesn't take any parameters either, since it depends on the 'from' and 'to' squares that the player specifies, which are retrieved by the function itself. Two string variables, from and to (FROM$ and GOAL$ in AMOS), are used to store the players text entry for these. The integers xf, yf, xt and yt hold the corresponding x and y coordinates for both squares, while rotation holds the direction of travel (remember that the findmove() function, discussed last month, will only operate on moves in a single direction at once) and distance holds the number of squares moved in that direction. The variable bad is a flag, set to 1 if the proposed move is found to be illegal. We also use a move structure called human (an array called CURRENTMOVE in AMOS), which is of the same type as the structures used by findmove().

The function first of all asks the player for the coordinates of the square containing the piece to be moved and that piece's destination square. The coordinates are input as strings. The x and y integer coordinates are retrieved from the strings by calls to xcoord() and ycoord(), functions discussed back in AS43 that convert ASCII values to their numerical equivalents. Note the use of the toupper() function (Upper$ in AMOS) to convert lowercase characters to uppercase ones before conversion to integers. This ensures that xcoord()



C LISTING – GET MOVE FROM PLAYER

```
/* get move from player */
void humanmove()
{
     char from[3],to[3];
     int xf,yf,xt,yt,bad,rotation,distance;
     struct move human;


     do {
   bad=0; /* assume a legal move before checking */
   printf("Enter coordinates to move from\n");
   scanf("%3s",from);
   printf("And to move to\n");
   scanf("%3s",to);

   xf=xcoord(toupper(from[0]));
   yf=ycoord(from[1]);
   xt=xcoord(toupper(to[0]));
   yt=ycoord(to[1]);
   /* test legality of move */
   /* first test if coords within bounds of board */
   if (xf<0 || xf>7 || yf<0 || yf>7 || xt<0 || xt>7 || yt<0 || yt>7 )
☛ bad=1;
   else {
        bad=1; /* now assume an illegal move until proved otherwise */
        /* now test that a black piece is there */
        if (board[xf][yf]<0) {
      /* check each possible move in turn against move selected */
      for (rotation=0;rotation<8;rotation++) {
           human=findmove(board[xf][yf],xf,yf,rotation);
           if (human.distance>0) {
         for (distance=1;distance<=human.distance;distance++) {
              if (human.x+human.dx*distance==xt && ☛
human.y+human.dy*distance==yt) {
            bad=0; /* we've found the legal move */
              }
         }
           }
      }
        }
   }
   if (bad==1) printf("Invalid move\n");
     } while (bad!=0);
     printf("\n%s from %c%c to %c%c\n",pieces[-☛
board[xf][yf]],xf+65,yf+49,xt+65,yt+49);

      /* move rook in the event of a castling move */
      if (board[xf][yf]==-6 && (xf-xt)<-1) {
   /* castling to the right */
   board[xt-1][yt]=board[7][yt];
   board[7][yt]=0;
      }
      if (board[xf][yf]==-6 && (xf-xt)>1) {
   /* castling to the left */
   board[xt+1][yt]=board[0][yt];
   board[0][yt]=0;
      }
      /* actually move piece */
      board[xt][yt]=board[xf][yf];
      board[xf][yf]=0;
      /* update notmoved array */
      notmoved[xt][yt]=0;
      notmoved[xf][yf]=0;
      if (board[xt][yt]==-1 && yt==0) {
   /* piece needs to be promoted */
   printf("Promoting your piece to a queen\n");
   board[xt][yt]=-5;
      }
}

/* evaluate returns a board score for player */
int evaluate (int player)
{
      int score=0;
      int x,y;
      int currentpiece; /* the type of piece at current square */

      for (x=0;x<8;x++) {
   for (y=0;y<8;y++) {
         currentpiece=board[x][y]*player;
         if (currentpiece<0) /* opponent's piece found */
      score-=values[-currentpiece]; /* decrease due to material ☛
value */

         else score+=values[currentpiece]; /* increase due to ☛
material value */
   }
      }
      return score;
}
```

The symbol ☛ means *do not* type a return – keep typing to the end of the next line. ▼☛ means type a space, then keep typing to the end of the next line.

only has to deal with uppercase column references.

Next, the function checks whether the move is legal. The first check is that the coordinates reference positions on the board – i.e. that they all lie between 0 and 7. If not, the flag bad is set to 1.

The flag is also set to 1 if the coordinates are on the board. The function is now assuming the move to be illegal until proven otherwise. The human always plays black, so the function checks that the 'from' square contains a black piece (one with a negative value).

THE CLEVER BIT

Now for the clever bit. We've already written findmove(), which finds the maximum distance, if any, a piece can move in a supplied direction. We now call it for each of the possible directions in turn, supplying the 'from' square coordinates, the piece it contains and the rotation each time.

If a move is possible in this direction, then the distance element of human is greater than zero, in which case we loop through every distance between 1 and this value. In this loop a destination square is found by multiplying the current distance with the dx and dy movement vectors and adding the results to the 'from' x and y coordinates. If the results equal the 'to' x and y coordinates, then a legal move has been specified and bad is set to 0. The distance loop then closes, followed by the rotation loop.

If, after all that, bad is still 1, then an illegal move has been specified and the loop repeats, asking the player for another.

The function has to check for two special cases: castling and pawn promotion. Castling is straightforward – it works the same as discussed last month for findmove(). If the king is moving more than one square, then the function ensures that it moves the correct rook also. The correct rook is identified by determining whether the move is in the positive or negative x direction, and its new x coordinate is determined with reference to the king's destination square.

READY FOR PROMOTION?

Now the specified move is made. The contents of the 'to' square are replaced by those of the 'from' square, whose contents in turn are zeroed. The corresponding squares in the notmoved (NMOVED, in AMOS) array are also zeroed.

The check for promotion is simple. If the function is dealing with a black pawn at row 0, then it needs to promote it. Promotion is always to a queen – a minor limitation that you might like to improve on – by giving the square a new value of -5.

The last two functions work very much in tandem to produce the 'intelligence' of the program, the part that makes an informed choice as to which move to make. They use what is known as the 'minimax' algorithm.

The algorithm splits into two parts: search and evaluation. In this program, these are split into two functions, bestmove() and evaluate(). I'll be discussing the first and simpler part this month, and leaving the hard-working bit until next month. What a tease!

Evaluate() is given a board and a player, and

AMOS LISTING – GET MOVE FROM PLAYER

```
' get move from player
Procedure HUMANMOVE
Shared CURRENTMOVE()
Repeat
   BAD=0
   ' assume a legal move before checking
   Print "Enter coordinates to move from"
   Input FROM$
   Print "And to move to"
   Input GOAL$
   XCOORD[Upper$(Left$(FROM$,1))]
   XF=Param
   YCOORD[Upper$(Mid$(FROM$,2,1))]
   YF=Param
   XCOORD[Upper$(Left$(GOAL$,1))]
   XT=Param
   YCOORD[Upper$(Mid$(GOAL$,2,1))]
   YT=Param
   ' test legality of move
   ' first test to see if coords within bounds of board
   If XF<0 or XF>7 or YF<0 or YF>7 or XT<0 or XT>7 or YT<0 or YT>7
      BAD=1
   Else
      BAD=1
      ' now assume an illegal move until proved otherwise
      ' now test that a black piece is there
      If BOARD(XF,YF)<0
         ' check each possible move in turn against move selected
         For ROTATION=0 To 7
            FINDMOVE[BOARD(XF,YF),XF,YF,ROTATION]
            If CURRENTMOVE(4)>0
               For DIST=1 To CURRENTMOVE(4)
                  If CURRENTMOVE(0)+CURRENTMOVE(2)*DIST=XT ☛
and CURRENTMOVE(1)+CURRENTMOVE(3)*DIST=YT
                     BAD=0
                     ' we've found the legal move
                  End If
               Next DIST
            End If
         Next ROTATION
      End If
   End If
   If BAD=1 Then Print "Illegal move"
Until BAD=0
Print PIECES$(-BOARD(XF,YF));" from ";Chr$(XF+65);Chr$(YF+49);" to ☛
";Chr$(XT+65);Chr$(YT+49)
' move rook in the event of a castling move
If BOARD(XF,YF)=-6 and XF-XT<-1
   ' castling to the right
   BOARD(XT-1,YT)=BOARD(7,YT)
   BOARD(7,YT)=0
End If
If BOARD(XF,YF)=-6 and XF-XT>1
   ' castling to the left
   BOARD(XT+1,YT)=BOARD(0,YT)
   BOARD(0,YT)=0
End If
' actually move piece
BOARD(XT,YT)=BOARD(XF,YF)
BOARD(XF,YF)=0
' update NMOVED array
NMOVED(YT,YT)=0
NMOVED(XF,YF)=0
If BOARD(XT,YT)=-1 and YT=0
   ' piece needs to be promoted
   Print "Promoting your piece to a queen"
   BOARD(XT,YT)=-5
End If
End Proc

' EVALUATE returns a board score for a side
Procedure EVALUATE[SIDE]
SCORE=0
For X=0 To 7
   For Y=0 To 7
      CURRENTPIECE=BOARD(X,Y)*SIDE
      If CURRENTPIECE<0
         ' if opponent's piece found
         SCORE=SCORE-WORTH(-CURRENTPIECE)
         ' decrease due to material value
      Else
         SCORE=SCORE+WORTH(CURRENTPIECE)
         ' increase due to material value
      End If
   Next Y
Next X
End Proc[SCORE]
```

returns a score for that player. The same board position that gives a high score for one player will, of course, give a low score for the opponent. The subtlety of the evaluate() function determines the quality of chess that the program plays (in conjunction with the number of moves that it looks ahead). Initially, we'll be using a very simple evaluation strategy, which I'll improve on in a future instalment.

The search part of the algorithm goes through each legal move in turn and makes it, thereby altering the board position. By use of the evaluate() function, a score for each move can be found, and the algorithm picks the move with the best score. And that's the move that the computer makes. The process of looking more than one move ahead complicates this, but I'll go into that next month after discussing evaluate(), which is nice and easy to understand.

Because the board is a global variable, evaluate() only needs one parameter – the player that it is scoring for (remember, -1 represents the human and +1 the computer). It returns an integer result: the player's score.

Using x and y indices, it loops through each of the board's 64 squares. It multiplies the contents of the square by the player parameter. Because two negative or two positive numbers multiplied together both create a positive number, this has the effect of yielding a positive value for the player's pieces and a negative one for the opponent's.

If this value is negative, then the score (initialised to zero at the start of the function) is reduced by the value of the piece found. (Notice that the negative piece index, currentpiece, must be turned positive before the value array.) The material values of all the pieces (including an empty square) are held in an array called value (WORTH, in AMOS).

If the result of the multiplication is positive, though, the piece belongs to the player and its value is instead added to the overall score.

The y and x loops are closed, and the final value of score is the returned result of the function. It's a simple evaluation strategy – the values of all of a player's pieces are summed, and the value of the opponent's pieces are subtracted from the result. This means that, for a given board position, the score for one player is -1 times the score for the opponent, and that the score for both is 0 until a piece has been taken.

Next month I'll go into the details of how bestmove() works, and provide some ways of improving the program's game.

In the meantime, you might like to look at ways in which evaluate() can be improved. There are a number of other factors that could contribute to a score as well as material value. For instance, it's generally considered a good thing if a player's king has freedom of movement, so you could perhaps increase the score according to the number of free squares adjacent to the king. Also, a position is considered weaker if two of a player's pawns occupy the same column, since it means another column is left empty. Try modifying evaluate() to take account of this.

Good luck. I'll be back with more excitement next month – stay tuned. AS

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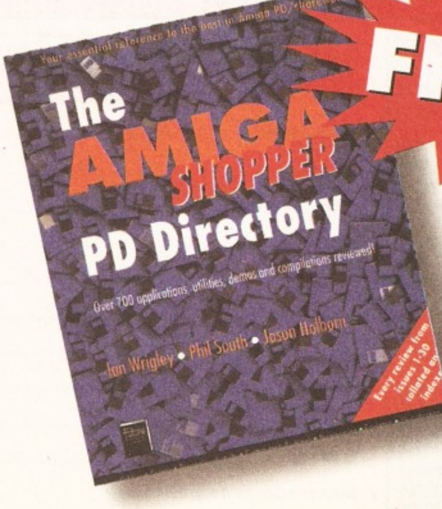
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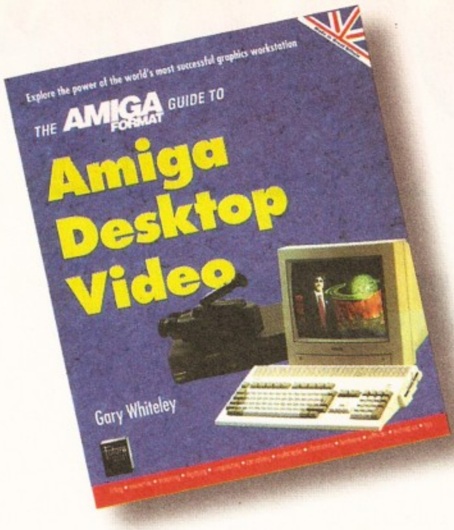


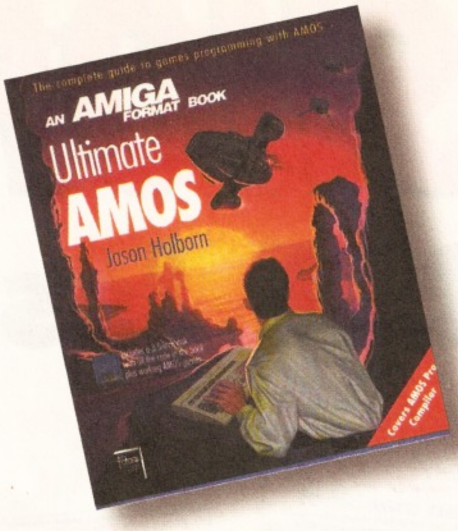
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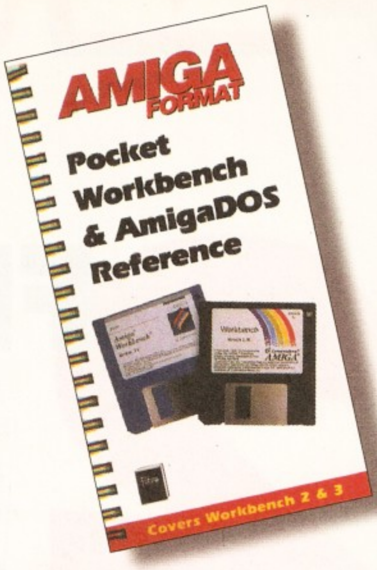
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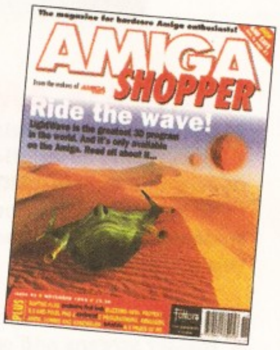
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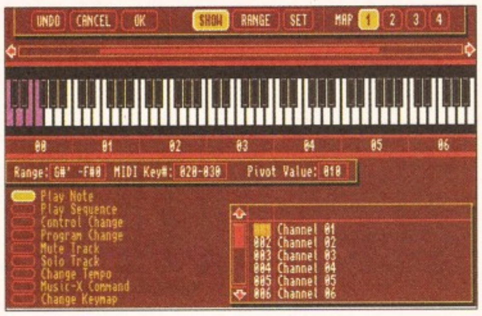


This amazing fractal landscape program from Meridian enables you to build your own scenery on your Amiga. Then you can animate it to create stunning fly-bys, or use it as backgrounds in your own games, pictures or 3D renders. And it even works on standard A1200s.

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Description	Vista Pro Lite
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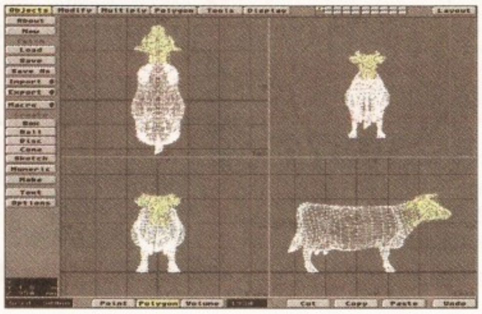
Anim Workshop v2



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Description	Anim Workshop V2
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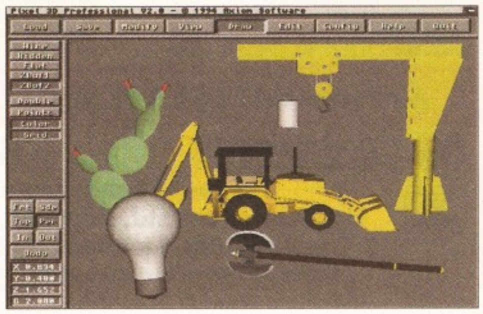
WaveLink



Fancy doubling the speed of your LightWave renders? If you have two Video Toaster equipped Amigas, this product will allow you to cut your rendering times in half by splitting each frame between the two machines. All you need to do is click on the "Render" button!

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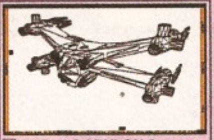
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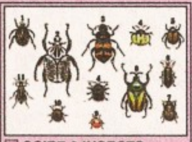
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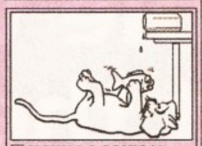
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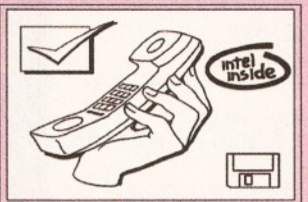
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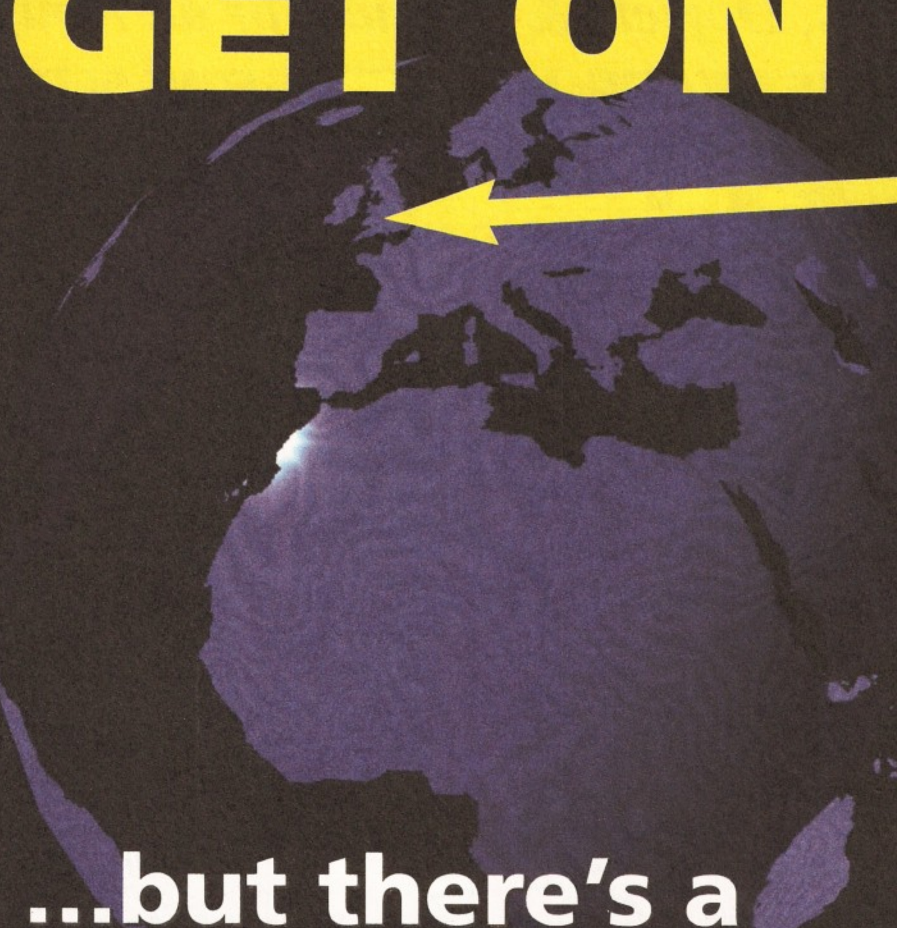
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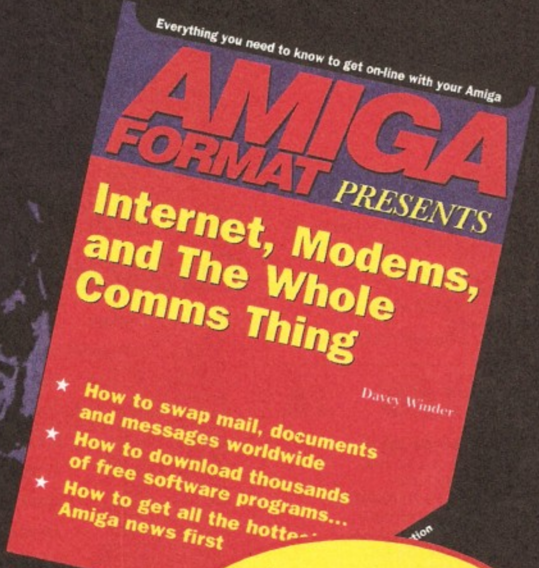
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SOFTWARE FOR FREE

Graeme Sandiford's search for PD perfection is never ending. This month he's got some filthy lucre and hot stash for you to dig into!

Hello and welcome to the biggest PD section of any Amiga magazine. Once again, we have another fine selection of free and nearly free software. This month we pay homage to Babylon 5 in the form of an Imagine objects disk. We also have an accounts manager that aims to make you filthy rich; a number of add-ons for ADPro 2.5 that make it an even more powerful program; a couple of programs that provide DMS with an easy to use Graphical User Interface; and, last but not least, a couple of good software compilations.

BABYLON 5 IMAGINE OBJECTS

Epic Marketing (BLF4-1)

No matter what you think of the TV show, whether you think it's great or incredibly dull, Babylon 5 has featured some pretty damned impressive ships. One sign that this is the case is this collection of objects that contain four of the ships that have appeared in the show. No, I'm afraid they have not been made by Foundation Imaging, the people responsible for the spacecraft you see in the TV programme. However, some of the models are quite detailed.

> *"Unfortunately, the Vorlon1 object looked more like a deformed jellyfish than a Vorlon spacecraft."*

The objects come on a single disk that includes models of a Delta Fighter, Vorlon 1, the Soul Hunter's ship and a Tyranid (Tyranid? I don't remember that one).

I'm sure anyone who has seen the show will know what a Delta Fighter looks like. They're the four-winged ships that Babylon 5 carries. The model included on this is a fair approximation. But, it lacks the overall smoothness and fine detail of the original – quite understandable of course. The object looks just a little blocky to use in close up stills, but is perfect for dog-fight animations.

The Soul Hunter model is better modelled with a little more detail, although the main wings have quite a few sharp edges. The Tyranid object can only be described as strange with a capital S. It seems to be a collection of oddly-deformed spheres that have been stuck together. Unfortunately, the Vorlon1 object turned out to be a just as poorly-modelled specimen – looking more like a deformed jellyfish than a Vorlon spacecraft.

To be fair to the collection, most of the models could be improved by adding a few textures. However, while some of the objects had IFF maps assigned to them, they were not supplied – which was a pain in the neck when it came to rendering them. By adding a couple of Essence textures I managed to get some half decent images. In the end £4 seems a bit much to ask for two useable models.

Product Rating 70%

DATACLAN FONTS 2 & 3

DataClan

I think I may have mentioned my penchant for fonts before – probably the result of working for a DTP company before I joined Future. Anyway, it's enough to say that I love fonts with a passion.*[Ooer – Ed.]* So, it was with great joy that I fell upon the DataClan fonts disks.

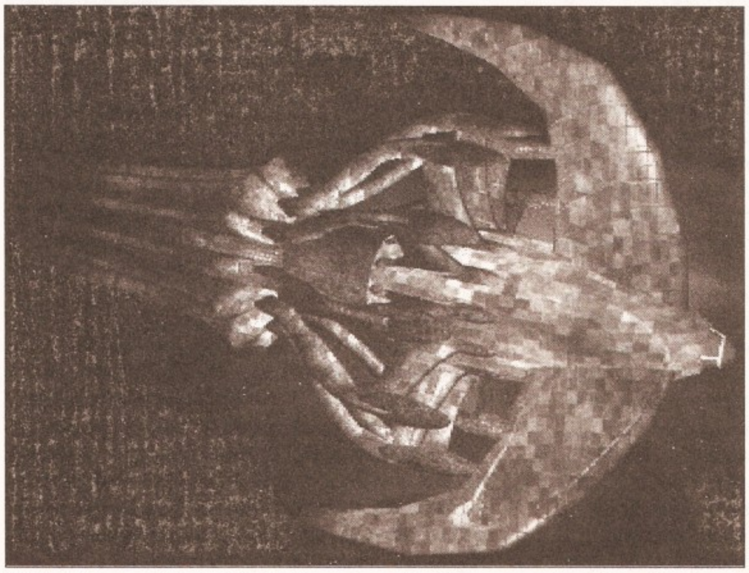
It's a collection of IFF format fonts, some original and others that have been culled from other sources. If you boot up from either of the floppy disks, you'll be treated to a mini slideshow complete with background music. Now, usually during a slideshow I'm driven insane by the music and end up frothing at the mouth and shaking uncontrollably. However, the music was actually pleasant – not mind-numbing or nerve-jangling Chip music.

The fonts themselves are, on the whole, quite impressive in terms of quality and presentation. Although, they are quite similar in style – very cyber punkish, there is still enough variety to appeal to most people. A nice touch is that each font shares its page with a hand-drawn picture.

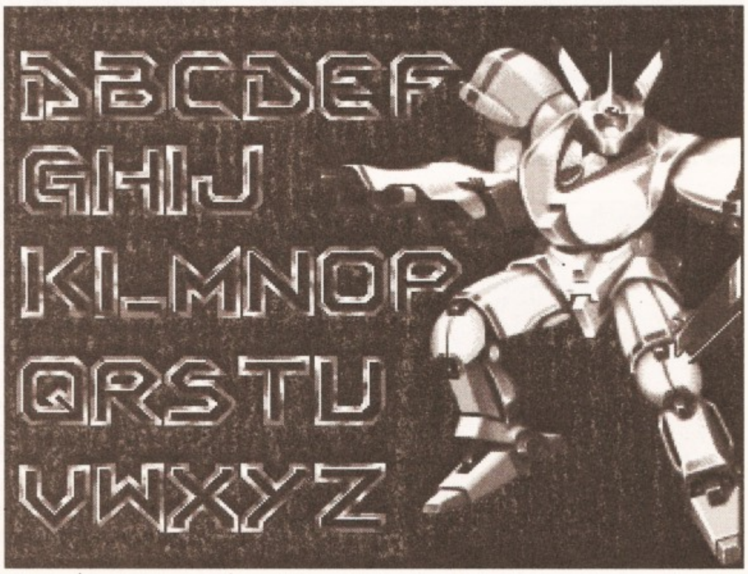
> *"If you fancy a bit of 'old-school' hand-drawn pictures and some nice fonts, you would be well advised to check this collection out."*

They are mostly fantasy and sci-fi-based and you'll probably recognise a few familiar images based on the work of Boris Vajelo and Tim White. Most of them are of high standard and are a welcome addition to the fonts.

If you fancy a bit of "old-school" hand-drawn pictures and some nice fonts, you would be well



While it is possible to obtain decent results from a couple of the objects on the Imagine Babylon 5 objects disk, you'll need to add your own textures.



This lovely font is just one of the outstanding fonts that can be found on the Dataclan collection. What's more, they are free!

advised to check this collection out. Another good thing about this collection is that it is PD in the truest sense of the word – it's free. To obtain a copy all you have to do is send a disk, for each of the collections you want, and a SAE to this address: DataClan, 17 Saltford, Allerdene Estate, Low Fell, Gateshead, Tyne & Wear, NE9 6BG.

Product Rating 85%

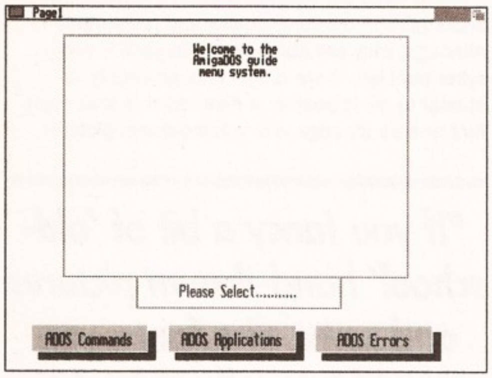
ROB'S HOT STASH #11

17 Bit Software

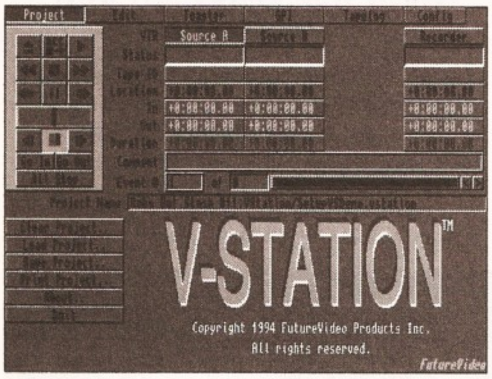
My goodness, I've seen some full PD disks in my time, but nothing that could prepare me for the bulging mass of PDness that is Rob's Hot Stash. There are 21 utilities on this single disk, covering things such as DirectoryOpus tools, ADPro scripts and a CV generator. So without wasting any more valuable space let's dive into this barely-contained abundance of PD programs.

● Don't you just hate it when you type dir while in Shell and the list of directories that appears is too large to fit on screen? ACD is a tiny program, only 1.5K in size, that performs a pretty useful function. It works a bit like a replacement for the CD command. However, once ACD has been added to your C: directory, typing acd will bring up a requester asking you which directory you would like to move to. You just select the directory from the list and you will be returned to Shell, but within the selected directory. This is a pretty good program to have around, although similar results can be achieved by using the interactive dir command as included in versions 2 and 3 of AmigaDOS.

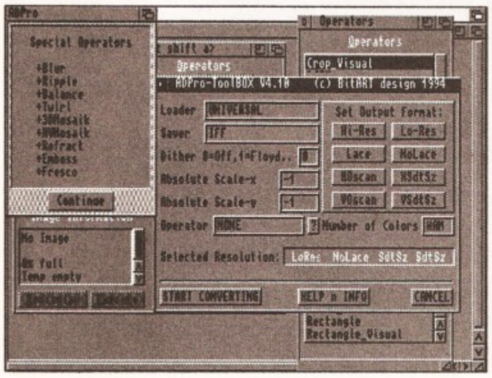
> **"My goodness, I've seen some full PD disks in my time, but nothing that could quite prepare me for Rob's Hot Stash."**



Confused by CLI, unsure of Shell? Then let AmigaDOSGuide give you a helping hand.



V-Staion has an impressive array of functions, but how much use is it for European users?



If you would like to add even more power to ADPro, then why not try the ADPro Toolbox?

● AmigaDOS can be quite confusing at times and any help that can be given is often very welcome. The AmigaDosGuide is one possible source of help for AmigaDOS tyros. I expected the AmigaDosGuide to be an AmigaGuide format document, so I was a little disappointed to discover that it was, in fact, a HyperBook presentation.

Regardless of the format it uses, the AmigaDosGuide sets out to give you a helping hand in using the Amiga's CLI effectively. The HyperBook presentation is quite simply arranged. The main menu has three sections; ADOS Commands, ADOS Applications and ADOS Errors.

As you might expect, the Commands section explains some of the functions that many of AmigaDOS' commands perform. It does this by detailing the command's usage format and providing examples. It always provides some notes about what the command actually does and when you'll need to use it.

The Applications section covers AmigaDOS applications such as DiskDoctor, Say and Ed. The final section covers AmigaDOS error codes. It provides a list of codes which you can select and receive a description of what the code means. This is a useful guide to using AmigaDOS, but some of the explanations are a little too short.

● ColCopy is an interesting inclusion to this collection. It's not really a program, rather it's a script that intends to make copying disks with a one-drive machine easier. To use it you just double-click on its icon and request will appear telling when to insert and remove your disks. The script uses the Diskcopy command, which the author feels is a little complicated for a beginner.

● CVMaker, or Resumemaker as it's known in its own tongue, is a program that has been designed to help you compile your CV. It's a tiny 11K-program that asks for your details and then produces an ASCII file or printout. To be honest, the results are a little crude and basic, but the program should be of some help if you are at a loss as to where to begin planning your CV.

● V-Station is another interesting inclusion – if a strange one. I'm not quite sure why it has been included though. It's a demo of a video editing station that has been designed to work with NewTek's Video Toaster. This means unless you actually have a Toaster, very unlikely, then you're not going to be able to use it. However, you can stare in wonder at the huge array of buttons that comprise the program's interface. If you are feeling particularly adventurous, you can even invoke the on-line help to find out what the buttons do.

● If you have ever lost data to a virus or a nosy sibling then you'll be well aware of how annoying it is when files are deleted when you don't want them to be. NoDOS is a program that sets out to stop this sort of thing from happening by accident or through an act of malice. It does this by locking selected AmigaDOS devices such as DF0:, HD1: or RAM:. Once you've placed a lock on a device it can only be removed by entering a password. While the lock is in place files cannot be deleted. Although, by employing my Machiavellian skills and devious mind I've managed to break this system, it should keep most viruses and casual saboteurs at bay.

● ADPro is an incredibly powerful program, but to convert or process an animation or batch of pictures you'll need to be able to create ARexx scripts or shell-out on a costly commercial package. The ADPro Toolbox fancies itself as an affordable replacement for MultiFrame and co.

It's an ARexx script that can be invoked from within ADPro to process or operate on several files automatically. You are given access to all of ADPro's Loaders, Savers and Operators and can set the output format.

The program has its own GUI and you can set your options by simply clicking on a few buttons and filling a few text gadgets. Once you have set your options you can then start processing your images by selecting a first and end frame and an output path. However, the frames must be suffix with a three-digit extension, such as 001. After you've done that, ADPro Toolbox will take over and load, operate and save each file.

While the program does not offer all the frills and options that its commercial counterparts do, it does make things a lot easier if you have several images that you wish to process in the same manner.

This is an impressive collection of programs, but it could have been better if one of the potentially best programs had worked properly. The DirectoryOpus utilities all refused to work on my A1200. However, it's still a good collection and if you have a weekend to spare you may even get the reluctant programs to work.

Product Rating 88%

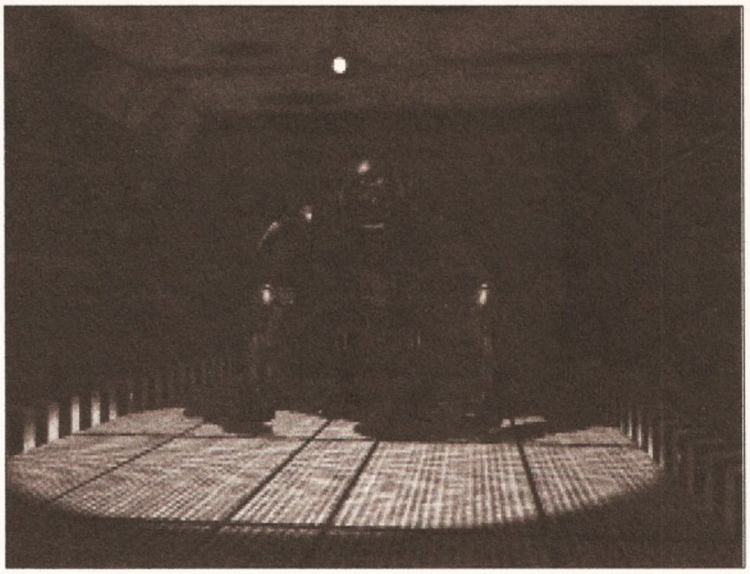
MAINACTOR 1.54

Cynostic

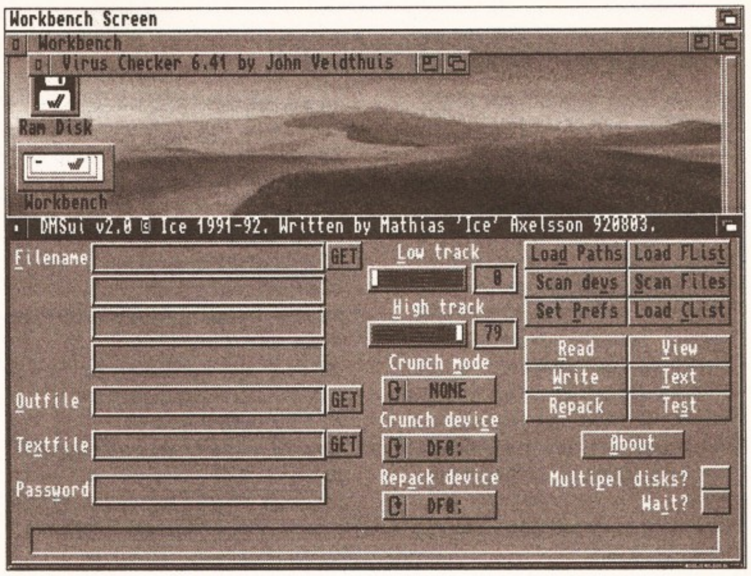
MainActor has got to be one of my favourite PD programs of the year. Now version 1.54 has arrived, the program has risen further in my estimations. It has a selection of new features, all of which are fully-functioning.

Unlike the previous version, instead of disabling the features of the shareware version, the program simply opens a requester mentioning that the program is shareware, every time you use one of its file functions. This is a pain in the butt, but it's a necessary one. At least it means I can evaluate all of the features, while reviewing it, and people who are considering purchasing the registered version can try them out too.

For those of you that are not familiar with MainActor, it's an animation utility that takes a



When using MainActor, it is possible to view animations in a variety of different format and now you can even add sound samples.



Using DMS through AmigaDOS can be a real pain in the butt. However, even beginners can use GUI tools supplied with the DMS Kit from Saddletramps.

modular approach to editing animations. It's an animation editor rather than a creator, so it has no tools for drawing, but it can save and load a variety of animation formats which makes it great for converting animations.

So, what's new? First off, the program now supports FLI, FLC, AVI and DL formatted animations. As these formats are widely supported by PC programs and, I believe, one or

> **"MainActor has got to be one of my favourite PD programs of the year."**

two Mac ones you can use the program to transfer animations to other computing platforms. As well as the increased file support the program can now playback sound files. At the moment it can only handle IFF samples, but the author intends to add support for other formats soon. The program's playback speed from Hard Disk has also been improved.

All the old functions are still there such as being able to append non-looping animations and ARexx support. A couple of ARexx scripts that can be used in conjunction with ADPro have been included. The program is still easy to use and providing you spend half an hour of so with the AmigaGuide file, you should be using the program to its full potential in no time. This is a first rate animation utility that provides a real alternative to its commercial counterparts and at £25 for the registered version it's exceptionally good value.

Program Rating 90%

DMS_KIT

Saddle Tramps PD

Over the last few years a couple of programs have established themselves as the accepted standard when it comes to compressing data. Lha is the most commonly used archiver for compressing files and DMS has become the de facto program for compressing disks. This disk from Saddle Tramps contains a copy of DMS and a couple of programs to make using this CLI-only program easier to use. DMSui and IntuiDMSPro are both GUIs (Graphical User Interfaces) for this popular package.

● Intui-DMS Pro 2.2 has been programmed in Blitz Basic 2 and has a quite straight-forward interface. Like the other program on this disk, Intui-DMS Pro aims to give the user access to DMS's disk-crunching features, but without having to resort to the horrors of CLI.

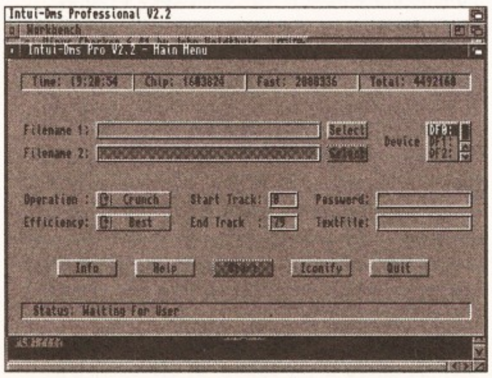
The program is designed to be simple and is just that. It has two toggleable buttons; one for setting the efficiency of the crunching and one for deciding which task to perform. The options available include crunching disks, de-crunching, re-crunching, testing and viewing DMS files.

There is also a list of devices that can be used as a source or destination, they can be selected by clicking on them. When selecting a DMS file for de-crunching you can make use of a file requester to select the file, rather than having to type out the file's directory path.

The program also has limited on-line help and a display of available memory. That's about it really, it does the job simply and easily.

● As you might expect, as they perform the same task for the same application, the programs operate in a similar fashion. DMSui's interface is very similar to Intui-DM pro's. You can select the same functions, but instead of toggling through the functions each task crunching etc., each function has its own button.

However, this program has been created with BBS Sysops in mind and has a couple of features that they will benefit from. The program can be used to load in path files, flists and clists. Aside



Intui-DMS is another GUI for use with DMS. It provides access to the program's features easily.

from this the programs are almost identical. However, I do prefer DMSui's interface – it's more attractively layed out and a tad more accessible.

This is a disk that contains two extremely useful programs, even if they do they same thing. It makes life so much easier, and, to be honest, I can never remember all of DMS's parameters when running it from CLI.

Product Rating 87%

FILTHY LUCRE

Saddle Tramps

I just had to review this product – for two reasons. First, because of its fantastic name and, second, because it was written by J Pritchard – the author of the most excellent Epoch Master (reviewed in

> **"It's an ideal program for someone who wants a no-nonsense financial management system."**

issue 41). As Filthy Lucre's name suggests, Mr Pritchard has turned his programming talents to helping people keep track of their money.

The program's interface is reminiscent of Epoch Master's, it has several buttons arrayed down the left-hand side of the screen. The program has been designed to be simple to use, but it still has its share of powerful features. The program operates on a straight-forward double entry system, you simply enter a date for the transaction, a code, a description and enter the amount in either the Debit or Credit box. The program will then work out a balance for you automatically.

When you have entered your transactions, you can choose to view the data in the form of a bar chart. Another powerful and useful feature is Sift. This will bring a requester that asks for a string to be entered. The program will then make a sifted selection of all entries that contain that string. This is particularly useful is you are trying to locate several bills of the same kind. These sifted entries can then be cut and pasted just like any

PUBLIC PERSONALITY

Barking Mad, as the name might suggest is one of the most humourous of PD houses. Whenever I receive anything in the post from them I drop what I'm doing, LightWave plug-in or not, and stick the disk in my drive. However, they have not been satisfied with being one of the funny men of PD houses, they also churn out some quality serious software.

I caught up with Francis Fox, the man behind Barking Mad, and had a quick chat with him about the joys and tribulations of running a PD library.

How long have you been running Barking Mad?

I'd say it's been about a year – as a PD service. But, before that we actually ran a local User Group and a couple of us got together and decided to start a PD library.

So how large a town is Lanark?

Well, it's quite a rural town, with about 20,000 people.

So how far apart do your members live?

Although, we started out locally, we now have members all across Scotland and the north.

How have you found running a PD library so far?

It's been okay so far, it was a bit of a grind getting everything together at the beginning – all of the cataloguing and viewing takes some time. But, it has all been moderately successful.

How important do you think a sense of fun is when trying to produce good PD?

Essential – there's no point in getting all serious and essentially PD is brought out by people who enjoy using the Amiga.

I've been using the 64 for a number of years and the Amiga too, the reason is that I enjoy using the machine and it's extremely rewarding to help other users have fun with their Amigas. If you don't enjoy your hobby there is no point in doing it.

What about a sense of community, how important is that?

It's especially important to us, as we started as a group of people swapping PD software. We would also discuss various problems and how to get around them.

As a PD library, what do you have to offer that most other libraries don't?

Well, one thing we do that most don't is a swapping service. PD is supposed to be free and the cheaper it gets the better. The way this works is that they send in a disk of programs and we will send one in return with the stuff they want from us.

other block of entries.

You can use the program to work on up to three separate accounts at the same time. You can also merge these accounts as well. The program also has a calculator, which has been disabled in the unregistered version. As well as being able to control various aspects of the program's operations from the bank of buttons on the left of the screen, you can also access a secondary menu by pressing the right-hand mouse button. Doing so will pop up a small menu that will give you access to several features, including the program's macros.

As with Epoch Master, the author has struck a fine balance between simplicity and power. The program is easy to use and more than capable of meeting most people's financial needs. It's an ideal program for someone who wants a no-nonsense financial management system. However, although a good program, it still falls behind ABank (issue 43) in terms of flexibility and power.

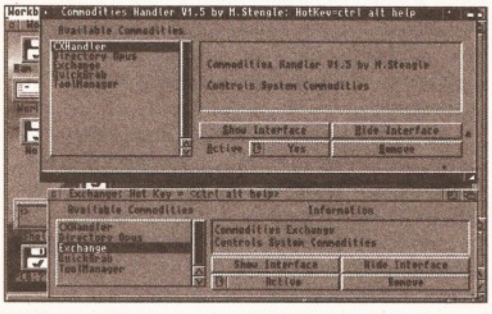
Program Rating 88%

ROB'S HOT STASH 12

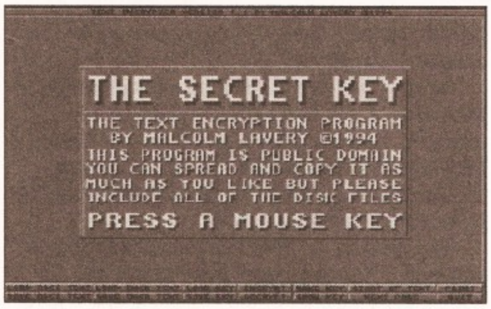
17 Bit Software

Hot on the heels of Rob's Hot Stash 11 is stash number 12. Like its predecessor, this disk has some interesting programs on it. Although, there is a slight bias to graphical tools, it's a quite varied compilation. There's an encryption system for the security-conscious, an index making add-on for ADPro 2.2 upwards, caller identifying system and a couple of AGA-only graphics programs.

● There are some things that are truly beautiful to watch, a sunset, a performing ballet dancer and an ingenious checkmate. But, there's another thing I would like to add to that list – ImageDex 2.1. It's wonderful to sit back and watch



Will you take the commodities-handler challenge – spot the difference between these two?



What do you mean I'm parnoid, I'm simply keeping my text files confidential with The Secret Key.

it go about its work. The thing that it does is create an image index of image files.

It's a shareware program that uses ADPro and ARexx to load a selection of images, reduce them in size and then composite them into one image. This will give you a collection of thumbnail images that you can open up and see a whole range of pictures at a glance. This can be particularly useful if you have a large selection of textures and would like to see what each of them looks like without having to view each file individually.

Using the program is easy – you just select the files you wish to turn into thumbnails by using a file-requester. You can choose the output format of the image, its size and colour depth. You can also specify the number of thumbnails you would like on each image, this can be between 6 and 48. Obviously, the number of pictures per page will affect their sizes and therefore their quality. However, thanks to ADPro excellent reduction routines the quality is still quite good even at small sizes.

The program is simple to operate and does so almost flawlessly – although, it can sometimes crash after producing the images. This program alone should be a good reason, for anyone with several image files, to buy this disk. The great thing is that as it uses ADPro, it has access to its loaders, so you aren't restricted to files of the same type. The program will also create as many files as needed automatically, so you can leave it running over-night compiling thumbnails of your 200 JPEG collection.

● If you are a regular reader of PD World, you'll be aware of my opinion of CloudsAGA, so I won't waste my breath on it. However, I thought I'd take a look at its stablemate, FractalAGA – also on this disk.

The program comes in three different flavours, 68020, 68020_FPU and 68040-optimised. Unfortunately I was unimpressed by all of the program's variations. Its options are few in number and its output is unspectacular. I don't know, maybe I'm suffering from fractal-overdose, but this program failed to retain my interest for more than 32 seconds and is unlikely to hold yours for longer – unless you lead an exceptionally dull life.

● CXHandler is a strange program, or to be more exact its reason for existence is strange. It's supposed to be a replacement for Commodore's Exchange Commodity Handler, but appears to be almost identical. Quite why anyone would wish to replace a program with another that performs the same function in the same manner is beyond my understanding.

● The Secret Key is not a get rich scheme, rather it's a text encryption program. I must admit that, although I'm as paranoid as the next person I

ANOTHER CHANCE TO BECOME A STAR!

If you have discovered a PD or shareware that you have become totally enamoured with, write in and tell us about. But, don't stop there if you would like to see your name in print. We want you to send in a small review of one of your favourite new PD package.

We don't care what type of program it is, as long as it's good and you can justify its excellence. But, please, *please*, no reviews of SwimSuit Chix 58 or similar slideshows – just serious reviews of serious products for serious readers.

If that's not enough, we'll even pay you if it's a *really* well written review!

Send your review as an ASCII text document, along with a copy of the program, to:

I WANT TO BE A STAR
Graeme Sandiford,
Amiga Shopper,
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MERRY CHRISTMAS AND A HAPPY NEW YEAR - GZS

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GAMES

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G395 **HELICOPTER MISSION** - Superb Desert strike clone. Three different helicopters, each with their own missions. Warning, all text is written in German.
G396 **PENGO 2** - Zip your Penguin buddy through the ice cave mazes squashing the baddies. Great fun.
G397-G398 (2 DISKS) **INTERNATIONAL WRESTLING CHAMPIONSHIP** - Fantastic wrestling game for one or two players. Slams, punches, shoulder blocks, elbows, jump's off the ring post and loads of other bone crunching moves.
G399 **DYNAMITE WARRIORS 2** - Incredible Dynablasters clone. 1 to 4 player addictive arcade action. Not to be missed.
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G414 **EMPIRE STRIKES BACK CARDS** - Cardset for Klondike Deluxe II and III.
G415 **RETURN OF THE JEDI CARDS** - Cardset for Klondike Deluxe II & III.
G416 **DR WHO CARDS** - Cardset for Klondike Deluxe II and III. Due the size of the cardset it has been archived with LHA. You will have to sort this out for yourself.
G417 **FAST CARS CARDS** - Cardset for Klondike Deluxe II & III.
G418 **PINGWYNNE** - Arcade Penguin game with digitised speech samples of Graemme Taylor!!!!!!!!!!
G300 **VCHESS v3.1** - One of the strongest computer Chess games around, with more extra features than most commercial ones. NOT A500 1.3.
G419-G420 (2 DISKS) **STARWOIDS** - Inspired by the game Thrust and the Star Wars film trilogy, this is a real hot looking shareware game. Recently reviewed (and highly rated) in AF. A1200 ONLY.
G421 **TOP HAT WILLY** - Remember Jet Set Willy on the old 8 bit computers, well this platform game is based on that classic.
G322 **AUTO MOBILES** V1.11 - New release of this Skid Marks type racing game. More tracks, improved car control and loads of other improvements. Brilliant graphics.
G366 **ELLE McPHERSON CARDSET** - Cards for Klondike Deluxe AGA.
G371 **SUPER OBLITERATION** - Amazing Pang clone. Top game. Recently reviewed in Amiga Format.
G378 **SPECTRUM GAMES 10** - Games for the Spectrum emulator.
G283-G285 (3 DISKS) **KLONDIKE DELUXE AGA** - Card game in 256 colours. Superb. Look out for the great cardsets. A1200 ONLY.

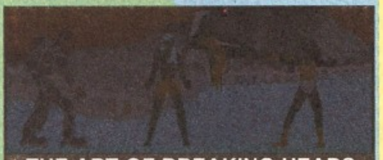
U512 **AF COPY v4** - Directory Opus type file manager with configurational buttons. NOT A500 1.3.
U513 **256 COLOUR ICONS** - Give your Workbench an extra touch of class with these superb 256 colour icons. A1200 ONLY.
U514 **IMAGINE 3.0 TEXTURES GUIDE** - For Imagine 3.0 only.
U515 **MUI v2.2** - Due to popular demand, Multi User Interface. NOT A500 1.3
U516-U517 (2 DISKS) **PAGESTREAM v3C PATCH** - Upgrades the earlier bug ridden version of Pagestream 3.
U518 **VIRTUAL MEMORY MANAGER V2.1** - Turns your hard drive into virtual memory which will increase your overall computer memory. Requires a 68040 or 68030 CPU with MMU.
U519-U520 (2 DISKS) **MAGIC WORKBENCH ICONS 3** - For amiga users aspiring for that Workbench beautiful look. NOT A500.
U521 **VIDEOTRACKER 2 AGA** - Create amazing looking AGA demos with no coding experience. A1200 ONLY.
U522 **VIDEOTRACKER 2 OCS** - Videotracker for non AGA amiga's. NOT A500 1.3.
U523-U526 (4 DISKS) **VIDEO TRACKER EXTRAS** - Four disks full of extra effect routines and objects, etc...
U527 **FONT FARM 9** - Masses of Bitmap fonts for use with Deluxe Paint, Workbench, etc.....
U528 **FONT FARM 10** - More lovely bitmap fonts.
U529 **HARD DRIVE GAME INSTALLERS** - Games installers for Alien Breed AGA, Assassin SE, Body Blows, Body Blows 2 ECS, Goal, Ishar 2, Lemmings 2, Ruff and Tumble, Super Stardust, Super Frog, Zool 2 ECS, Walker. NOT A500 1.3.
U310 **PAY ADVICE ANALSYER 4.2** - Shareware wage slip database. Limited shareware version. NOT 500 1.3.
U530 **AUTO STEREOGRAM v2.d** - Generates those amazing 3D random dot stereogram pictures. NOT A500 1.3.
U531 **ACTION REPLAY IV AGA** - Software Action Replay. Rip graphics, music, train games etc....A1200 ONLY.
U532 **MORE 256 COLOUR ICONS** - Loads more great icons plus an AGA icon editor. A1200 ONLY.
U533 **ACCOUNT MASTER v3c** - Shareware personal accounts manager. Very professional with many features. Limited Shareware release. NOT A500 1.3.
U451 **SPECTRUM EMULATOR v2.0** - New version of the Spectrum emulator. Includes some games.
U434 **VIRUS WORKSHOP v4.2** - Just out. Powerful multi-function virus checker and killer. NOT A500.
U486 **DISK MAG CREATOR v1.21** - Produce your own disk magazines with ease.
U443 **AMIGA DOS GUIDE v1.0** - Provides useful help on what the DOS commands are and what they do. Plus many of the common Dos error codes explained in English, etc...
U437 **AMOS EXTENSIONS** - Seven great Amos/Amos Pro extensions adding more commands to both languages.
U449 **ZXAM SPECTRUM EMULATOR AGA v1.3** - Optimised Speccy emulator to run games as fast as possible. Includes games. •A1200 ONLY•

MISCELLANEOUS

T76 **THE CHARTS ISSUE #13** - The demo charts and general disk magazine with many articles. Very well presented.
T77-T78 (2 DISKS) **MOVIE GUIDE (1994) V2.04** - Massive database on movies for film buffs. Hard drive installation only. NOT A500 1.3.
T79-T80 (2 DISKS) **CHEAT LISTER v3.05** - The largest compilation of game cheats and tips you'll probably ever find. 800 games covered. NOT A500 1.3.
T71 **DEADLOCK 9** - The SCENE disk magazine. Kewl.
T72 **UPSTREAM 9** - Another top Scene magazine with loads of up to date news and more.
T74-T75 (2 DISKS) **GRAPEVINE 20** - Needs no introduction. The latest issue of the most sort after Amiga disk mag around.
T67-T68 (2 DISKS) **LUCIFER'S BOOK OF SHADES** - Secrets from the occult. OVER 18'S ONLY.
T69 **LUCIFER'S WICKED GRIMOIRE** - More information and practices of the occult. OVER 18'S ONLY.
T36 **ALIENS CONFIDENTIAL** - Loads of (true?) stories from around the globe on Aliens and UFO's.

DEMOS

D228 **BEAUTY PACK 1** - Collection of the best intro's around. Intro's are mini demos.
D229 **BEAUTY PACK 2** - More great intro's for demo collectors.
D230 **BEAUTY PACK 3** - Another well presented pack of intro's
D231 **BEAUTY PACK 4** - The last in the series of intro's from the top euro coding groups.
D232 **BAD ZOOM** - Rubbish visuals but funky music track. I like it!
D233 **TRACKERS 242** - Great follow up to the original ground breaker. If you only have 2 meg, disable all external drives (inc. HD's). A1200 ONLY.
D234 **VITAL** - From up and coming coding group, Mystic. A1200 ONLY.
D235-D237 (3 DISKS) **MAXIMUM OVERDRIVE II** - One impressive RAGE production. If you remember Maximum Overdrive you'll have an idea of what to expect. This is 100 times better. A1200 ONLY.
D238 **BAZZA & RUNT** - A must get demo. Real cool. A1200 ONLY.
M156 **SWAMP THING** - Mix of the chart single. A1200 ONLY.
D217 **POLKA BROTHERS "GEVALIA"** - Great new demo. A1200 ONLY.
D219-D220 (2 DISKS) **ARTIFICIAL PARADISE** - More spectacular effects. A1200 ONLY.
D221-D222 (2 DISKS) **LETHAL DOSE 2** - Don't miss this amazing demo. A1200 ONLY.
D223-D224 (2 DISKS) **SWITCHBACK** - From Rebels. A1200 ONLY.
D226 **GIMME ALCOHOL** - What we call in the trade a dentro, a demo/intro combination. A1200 ONLY.
D227 **JAMMIN** - Good use of the AGA in producing colourful pattern effects. A1200 ONLY.



THE ART OF BREAKING HEADS

SLIDESHOWS

S156-S158 (3 DISKS) **BODY SHOP 8** - Glamour slideshow. A1200 ONLY.
S159-S161 (3 DISKS) **CLAUDIA SCHIFFER 94** - Glamour slideshow. A1200 ONLY.
S137-S139 (3 DISKS) **GIRLS GIRLS GIRLS** - Glamour slideshow. A1200 ONLY.
S140-S142 (3 DISKS) **CLAUDIA SCHIFFER SLIDESHOW, THE WORKS** - The super model. A1200 ONLY.
S143-S145 (3 DISKS) **ELLE McPHERSON SLIDESHOW, THE WORKS** -Another super model. A1200 ONLY.
S146-S148 (3 DISKS) **CINDY CRAWFORD SLIDESHOW, THE WORKS** - Richard Gere`s missus.A1200 ONLY.
S149-S150 (2 DISKS) **FANATICS GUIDE TO COMPUTERS** - Comic slides showing you what happens when obsessive users go that little bit too far. Very funny.
S151 **LINGERIE 1** - Models in lingerie. A1200 ONLY.
S152 **LINGERIE 2** - More of the same. A1200 ONLY.
S153 **LINGERIE 3** - More of the same. A1200 ONLY.
S154 **LINGERIE 4** - More of the same. A1200 ONLY.
S155 **LINGERIE 5** - More of the same. A1200 ONLY.

IMAGINE OBJECTS

U453 **FURNITURE OBJECTS** - Tables, chairs, cabinets, etc..
U454 **HOUSEHOLD OBJECTS** - Items you may well find around the home.
U460-U461 (2 DISKS) **AIRCRAFT OBJECTS** - From World War One biplanes to the modern day Stealth fighters,
U462-U463 (2 DISKS) **SCIENCE FICTION OBJECTS** - Tron Light cycles and tanks, space stations and space ships, etc...
U464-U466 (3 DISKS) **ARCHITECHURE OBJECTS** - Houses, skyscraper, colosseum, and other types of man made structure.
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U470 **INSECT OBJECTS** - Creepy crawlies.
U471 **DINOSUAR OBJECTS** - Prehistoric beasts.
U472 **ANIMAL OBJECTS** - Many types of mammals.
U457-U459 (3 DISKS) **STAR WARS OBJECTS** -X-Wing, Y-Wing, Scout walker, Death Star, Tie Fighters, And loads more.
U452 BABYLON 5 OBJECTS- Loads of ships from the top TV series.
U455-U456 (2 DISKS) **STAR TREK OBJECTS** - From the orginal and new series.

TEXTURES

U479 **IMAGINE MISCELLANEOUS TEXTURES** - Textures for Imagine.
U480-U482 (3 DISKS) **IMAGINE STONE TEXTURES** - Textures for Imagine.
U483 **IMAGINE WOOD TEXTURES** - Textures for Imagine.
U484 **IMAGINE ORGANIC TEXTURES** - Textures for Imagine.

OTHER

U476-U477 (2 DISKS) **IMAGINE BUDDY SYSTEM** - Used in conjunction with Imagine 2.0 for the ulitmate Imagine tutorial and reference guide. Every single function is detailed in great depth. Essential.

HIGH QUALITY MONO BITMAP CLIPART


AIRCRAFT CLIPART (3 DISKS) U535-U536


FAMOUS PEOPLE CLIPART U553


MEN CLIPART U561


SCHOOL CLIPART U570


CATS CLIPART U569


WEDDING CLIP ART (3 DISKS) U537-U539

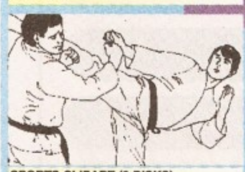

OFFICE & BUSINESS CLIPART (2 DISKS) U551-U552



POWER POINTS CLIPART (4 DISKS) U557-U560

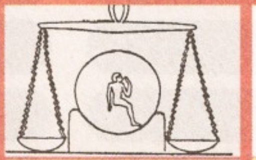

MONSTERS CLIPART U568


AQUATIC CLIPART U571


SPORTS CLIPART (3 DISKS) U540-U542


CARS CLIPART U550


BUILDINGS CLIPART U556


ZODIAC CLIPART (2 DISKS) U565-U566


ANIMAL ANTICS CLIPART U567


CHRISTMAS CLIPART (5 DISKS) U543-U547


WOMEN CLIPART (2 DISKS) U548-U549


CHILDREN CLIPART (2 DISKS) U554-U555


CARTOON CLIPART (2 DISKS) U562-U563


FLOWERS & PLANTS CLIPART U564

PROFESSIONAL DISK PACKS

COMMS CONNECTED

A mighty collection of comms programmes for new users on 8 disks:
Ncomm v3.0.
Terminus 3.0d.
Term 4.1a.
Guide To Comms.
Internet Guide.
Trapdoor. And much more.
DISK REFS: U572-U579.
NOT A500 COMPATIBLE

VIRUS EXTERMINATORS V2

Compiled by the N.A.U.G
All the best and best virus killers on 2 disks. Contains:
Virus Checker v6.43.
Boot X v5.23B (with latest v2.18 Brain file).
Virus Workshop v3.90.
Virus Z II v1.90.
DISK REFS: U499-U500.
NOT A500 COMPATIBLE

HARD DISK TOOLS V2

Compiled by the N.A.U.G
The very best Hard Disk tools: Clickable menus, Repairers, Installers, Backup programmes, and more. CONTAINS:
HD Click v2.60. MR Backup. ABackup v4.06. HD Mem v1.0. Superlock. HD Installer v1.04. AF Copy. AND MANY OTHERS!
DISK REF: U501-U503 (3 DISKS)
NOT A500 COMPATIBLE

MOST USEFUL UTILTIES v2

Compiled by the N.A.U.G
Pack contains tools to improve your Workbench in terms of speed, usability and looks. CONTAINS:
Tools Daemon v2.1.
Magic Workbench Icons.
GBlanker v3.30 (Screen blanker).
Magic Menu v1.9.
ARQ.
Magic File Requester. AND MORE...
DISK REF: U504-U505 (2 DISKS)
NOT A500 COMPATIBLE

can never be bothered to fiddle around with a CLI program to encrypt my files. However, The Secret Key may turn me into a more security-conscious person, as it has its own GUI.

The program can load and save ASCII text or encrypted text. To decode encrypted text you'll need a key, keys can be loaded and saved as well. If you want to send an encrypted file to a friend, all you have to do is make a key, load the file, encrypt it, save the key, save the file and send both to your fiend. That's about it, simple and painless.

● CID is an interesting program that can be used in conjunction with certain modems to keep a record of who has called your modem. If you have a modem that has Caller ID ROMs then your modem will be able to recognise the phone number of callers. CID can then store the callers in a database and thereby inform you of who has called and when. Unfortunately, as we don't have the necessary phone system in this country at the moment I couldn't test it out. But there is no reason why it shouldn't work.

This is a reasonably solid collection from 17 Bit, but it is let down a little by one or two of its programs, and is probably only worth considering if you have ADPro.

Product Rating 80%

WORDS PRO 4

Amiganuts P.D.

I love word puzzles – they can be fascinating and can sometimes even make you think about a word in a different way. However, sooner or later, no matter who you are, you'll run into an anagram or crossword that is too tough for you to handle. It's times like these that you'll be glad that you have an Amiga – if you have a copy of Words Pro, that is.

You may already be familiar with Words Pro, it's been around a few years now and is quite popular among word puzzle addicted Amiga-owners. This is the fourth, and probably final, version of the program that was designed to help solve anagrams and match words back in 1991.

"It is definitely one of the best programs of its kind and should help prevent many a nervous break-down."

The program utilises a dictionary of over 100,000 words to match a user-defined pattern. Defining a pattern is easy – you just enter the letters that you have and insert a space for those you don't have. After you've done that, the next thing you need to do is perform a search.

If you are trying to find the missing letters from a word in a crossword, you'll need to perform a match search. This will search the dictionary for words that will match the pattern you have set in the same order. An anagram search will attempt to find a match for the pattern, but will also check for different sequences of the letters.

I was thoroughly impressed by the program's performance and the size of its dictionary. It is definitely one of the best programs of its kind and should help prevent many a nervous break-down.

Program Rating 88% AS

GET IN TOUCH

If you have discovered, or written, any PD, shareware or licenseware that you feel is pretty special, then please send it in for review. If you are a shareware author, please send in the registered version of the program.

Also, if you have any suggestions or comments about this section of the magazine, please write to:

Graeme Sandiford
Amiga Shopper
30 Monmouth Street,
Bath BA1 2BW

GET TO THE TOP IN THE PD CHARTS

If you run a PD library and would to tell the world about all the wonderful goodies that are simply bursting out of your disk boxes, send in a list of your top ten utilities and animations.

In every issue we include the chart below to give our readers the opportunity to find out which products are popular with their fellow readers. If you want to tell us what your top-ten PD list looks like, write to:

Graeme Sandiford
Amiga Shopper
30 Monmouth Street,
Bath BA1 2BW

TOP TEN PD CHART – IT'S THE ONLY CHART THAT COUNTS

This month we continue our quest to keep you up-to-date with the most popular PD at the moment. We give you a list of the top ten programs and disks that have been ordered from two PD libraries. It gives you a chance to see which programs are popular with your fellow Amiga-users.

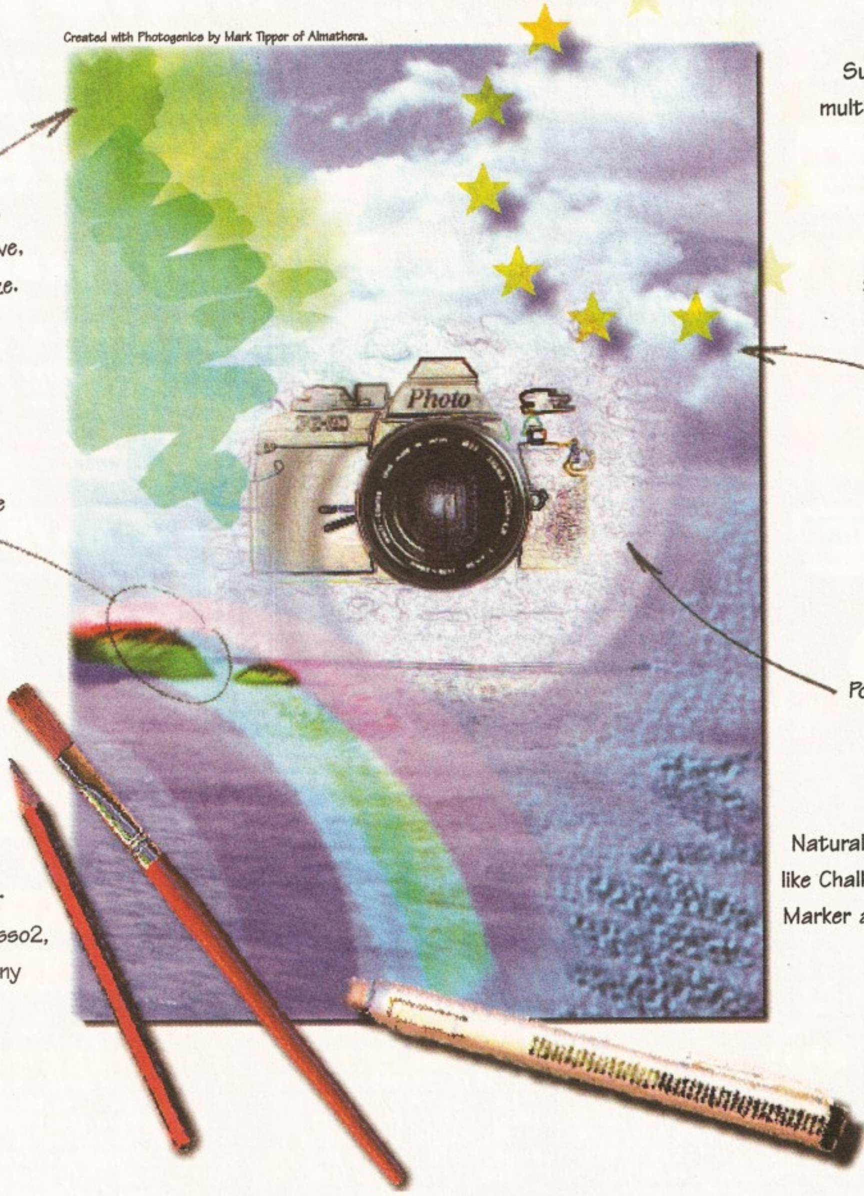
	Asgard Software ☎ 0924 363059	Barking Mad
1	Spectrum Emulator AGA	No Errors
2	PC Task V1.04	ReloKick 1.4
3	Amiga For Beginners Tutorial	Lyapunov
4	Archivers collection	HD Click V2.53
5	Share Manager V3.0	Octomed Tutorial
6	JC Graph	Astronomy 2.0
7	Diskmanager V4.00	Shadow Samplemaker 3.1
8	GIF viewers and convertors	Desktop Video Stuff
9	Edplayer	Assasins Back to School
10	Star Trek	Discovery of the Atom
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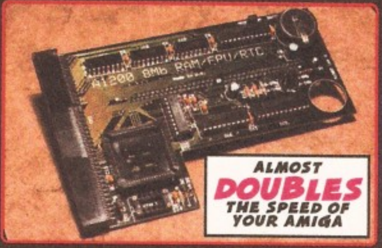


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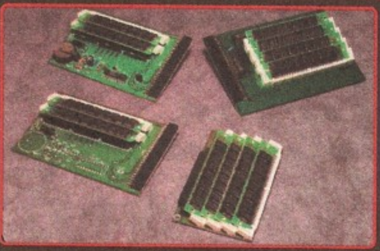
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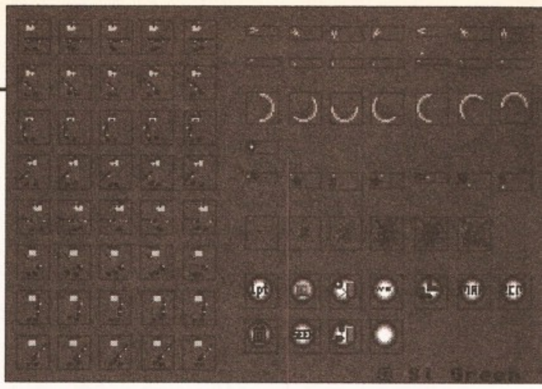
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17 Bit Software, 1st Floor Offices, 2-8 Market Street, Wakefield, West Yorkshire, WFI IDH. Telephone (0924) 366982, Fax (0924) 200943. Catalogue .50p or free if you send an SAE. Accept phone orders, credit cards and direct debit. Open 8am–8pm Mon–Thur, 9am–5.30pm Fri–Sat.
A1200 Only PD – BJ Cowdall, 23 Barn Way, Cirencester, Gloucestershire GL7 2LY. Try to obtain all AGA PD and WB3 utils etc. Catalogue is £1.00 or send a disk and an SAE. No phone orders or credit cards. For a printed catalogue just send an SAE. Disks are £1.00 each. Frequent special offers!
Active Software, PO Box 151, Darlington, County Durham DL3 8YT. Telephone & Fax (0325) 352 260. EMail Bux8@unn.ac.uk. Specialise in professional collections, compile disk packs, essential Aminet compilations and sound samples. Catalogue is 50p. No phone orders, no credit cards or direct debit. Open 9am–9pm. Discounts to User Group members.
Activity Software, 393 Doncaster Road, Rotherham, South Yorkshire, S65 2UF. Telephone (0709) 377730. Catalogue 1st class stamp. Do not accept phone orders, credit cards or direct debit. Open from 9am - 5.30pm Mon to Sat. Additional info, also stock PC Shareware. Crazy Joe's, 141 Effingham Street, Rotherham.
AGA Exchange, 18 Brownshill, Cromer, Norwich, Norfolk, NR27 0QA. specialist areas: AGA PD/Shareware full advice service, PD exchanges, Laser printing service. Catalogue free (with s.a.e. + disk). No phone orders, credit cards or direct debit. Half price membership (£4.50) until 1/11/94.
AmiCom PD, 22 Church View Close, Havercroft, Wakefield, WF4 2PH. Catalogue .50p. Do not accept phone orders, credit cards or direct debit.
Amiganuts, 3 Spring Road, Bitterne, Southampton, Hampshire, SO19 2BH. Specialist areas: Acc, Accm, Words 4, general software and titles produced by M. Meany. Catalogue, .50p + s.a.e. Do not accept phone orders, credit cards or direct debit. Open 24 hours a day, 7 days a week. New ownership.
Anglia PD, 30 Victoria Street, Felixstowe, IP11 7EW. Telephone (0394) 283494. Catalogue .70p. Accept phone orders, credit cards and direct debit. Open 9am - 5.30pm.
Anim 1 PD, PO Box 128, West Malling, Kent, ME19 6UA. Telephone none. Specialise in Animation graphics. Catalogue cost .60p. No: phone orders,credit cards,direct debit.
Asgard Software, 20 Langdale Drive, Flanshaw, Wakefield, W Yorks WF2 9EW. Telephone (0924) 363 059. Specialise in all types of Amiga PD (approx. 4,000 disks in library). Catalogue is £1.00. No phone orders, no credit cards or direct debit. Open 24 hours.
Barkin Mad, 18 Rhyber Avenue, Lanark, Lanarkshire, ML11 7AL. Telephone (0555) 663530. Catalogue FREE when sending a s.a.e. and/or disk. Accept phone orders. Do not accept credit cards or direct debit. Open 24 hours - 7 days. We fully encourage swapping PD as well as selling to try to spread good quality PD as far as possible.
Beats Brothers PD, 6 Brownings Close, Pennington, Lymington, Hampshire, SO41 8GX. Specialist areas: Amiga games and utilities. Catalogue £1.00 inc P&P. Do not accept phone orders, credit cards or direct debit. The catalogue disk will be released in August 1994.
Belshaw's Computers, 55 Balderton Gate, Newark, Notts. Telephone and Fax (0636) 72503. Catalogue FREE. Accept phone orders. Do not accept credit cards or direct debit. Open 9.30am to 5.30pm. Retail outlet, customers can call at shop.
BGPD, 6 Peter Street, Whitehaven, Cumbria, CA28 7QB. Specialist areas: I can supply any title reviewed in any Amiga magazine. I always have the latest assassin collections. Catalogue .50p or send a blank disk. Do not accept phone orders, credit cards or direct debit. I can also supply many second hand (commercial) games + utilities, and I can provide a PD document printing service.
Blitz basic PD, 30 Riding Dene, Mickley, Northumberland, NE43 7DL. Specialise in Blitz Basic created PD. Catalogue is £1.50. Open 9am–5pm. Orders processed within 48 hrs. Also produce a diskmag for Bliz users.
Chris's PD, 22 Merryfields Avenue, Hockley, Essex, SS5 5AL. Telephone (0702) 203826. Chris's PD disk catalogue .70p, 2 disk Fred Fish catalogue £1.40, both Chris's PD & Fred Fish disk catalogues £2.00 or Free if you send s.a.e. with sufficient disks. Do not accept phone orders, credit cards or direct debit. Open 6pm-8pm Weekdays, 10am-4pm Saturdays. All disks are virus free & error free. All disks only .80p each.
CAM-PD, 26 Crowland Way, North Arbury, Cambridge CB4 2NA.
Club 1200, 57 Europa Rd, Lowestoft, Suffolk NR32 4BQ. Telephone (0836) 328 263. Specialise in AGA and WB3 only. Catalogue is £1.00. No phone orders, no credit cards or direct debit. Open 9am–7pm Mon–Fri. One disk free for every five bought.
CPU Computer PD Library, 120 High Street, Chatham, ME4 4BY. Tel + Fax: 0634 826 218. Catalogue cost £1.00. Open 9.30am–5pm Mon–Sat.
Craig Holmes Non-Profit PD, 23 Rocester Avenue, Wednesfield, Wolverhampton, West Midlands, WV11 3AU. Telephone (0902) 305209. Specialist areas: latest virus checkers. Catalogue, free listing upon request. Do not accept phone orders, credit cards or direct debit. Open, mail order only - but phone enquiries 9am-8pm, 7 days a week. Additional info, all discs £1.75 inc p&p. Bulletin board available on Sunday 2pm-5pm only.
Cynostic, Office 01, Little Heath Industrial Estate, Old Church Road, Coventry, CV6 7NB. Telephone (0203) 681687, Fax (0203) 638508. Specialist areas: all latest demos, comprehensive utility section and complete coverage of the PD spectrum. Catalogue nil for paper, £1.00 for catalogue disk. Do not accept phone orders but will within 6 months. Do not accept credit cards or direct debit. Open 10am 6pm. We offer total product support, plus we can advise on any Amiga problem.
Dead Budgie PD, 53 East Street, Ashburton, devon TQ13 7AQ. 70p for two disks. Don't accept phone orders, nor credit cards or direct debit. They accept postal orders or cash – cash is sent at your own risk however.
Deck The Ripper of NFA PD, 173 Trevind Drive, Rushey Mead, Leicester LE4 7TR. Telephone (0533) 661 610. NFA productions are setting up a network of PD houses across the UK in an effort to get PD to the public as cheaply as possible.
Epic Marketing, Victoria Centre, 139 - 139 Victoria Road, Swindon, Wiltshire, SN2 3BU. Telephone (0793) 490988, Fax (0793) 514187. Specialists areas, desktop video fonts and tutorials. Catalogue £1.00. Accept phone orders and credit cards. Open 9.30am - 5.30pm Mon to Sat.
Essex computer systems, Freepost CL2875, Southminster, Essex, CMO 7BR. Telephone (0621) 778778. Specialise in Licenceware (central licenceware register C.L.R. organiser). Catalogue FREE. Phone orders accepted. Accept credit cards/direct debit. Open 10am - 6pm Mon to Fri. Members of the Professional standards for software distribution.
Eurodisk PD, 71 Phillimore Place, Radlett, Herts WD7 8NJ. Catalogue cost £1.00 (free if disk + SAE is encl).
F1 – Licenseware, 31 Wellington Rd, St Thomas, Exeter, Devon EX2 9DU. Telephone (0392) 493 580. Catalogue is 50p. No phone orders, no credit cards. Open 9am–9pm.
Fantasia PD, 40 Bright Street, Gorsehill, Swindon, Wiltshire, SN2 6BU. Telephone (0793) 610134. Specialist areas: Slideshows, 3D rendered images (jpeg) serious software. Catalogue .70p + .40p P&P or blank disk + S.A.E. Accept phone orders. Do not accept credit cards or direct debit. Open 24 hours. We are a non profit PD house with all proceeds going back into the PD house.
Five-Star PD, 48 Nemesai, Amington, Tamworth, B77 4EL, U.K. Telephone (0827) 68496. Specialist areas: education utilities, DTP games. Catalogue .70p + Free P&P. Do not accept phone orders, credit cards or direct debit. Open 9am 0 2pm 7 days a week. All disks .99p + Free disk when buy 10 or more.
GD PD, 99 Turnberry Rd, Great Barr, Birmingham B42 2HP.
G.V.B. - PD, 43 Badger Close, Maidenhead, Berkshire, SL6 2TE. Telephone (0831) 649386, Fax (0628) 36020. Specialist areas: all types. Catalogue 3 x 1st class stamps. Do not accept phone orders, credit cards or direct debit. Open 9am to 7pm. All disks £1.00 inc p&p with a valid account number, first disk £1.50.
GD PD, 99 Turnberry Rd, Great Barr, Birmingham B42 2HP.
Gothik, 7 Denmark Road, Northampton, NN1 5QR. Telephone (0604) 22456. Specialist areas: Blitz Basic 2 programming + PD. Do not accept phone orders, credit cards/direct debit. Open Sat 10am to 5pm. We were Batty's PD Club, but are now concentrating on Blitz Basic 2 users.
Hornesoft PD, C. Horne, 23 Stanwell Close, Wincobank, Sheffield, S9 1PZ. Telephone (0742) 492950. Specialist areas: Amiga PD over 11000 disks, CD ROMS. Catalogue, Free if a s.a.e. + disk are sent. Do not accept phone orders, credit cards or direct debit. Open from 9am till 6pm.
ICPUG (Independent Commodore Products Users Group), 45 Brookscroft, Lindon Glade, Croydon, CR0 9NA. Telephone 081/651/5436, Fax 081/651/3428.
Immediate Arts, 26 Lyndhurst Gardens, Glasgow, G20 6QY. Telephone 041/946/5798. Catalogue, catalogue disk £1.00 (p&p inc). Do not accept phone orders, credeit cards or direct debit. Open 9am to 6pm.
JJPD, 48 Bewick Drive, Bakersfield, Nottingham NG3 7GB. Tel: 0602 877 528. Specialise in utilities. Catalogue cost 75p inc. P+P. Open Mon–Sun 9.30–4.30. All PD 99p. Hardware also available. Special members discount scheme.
KEW = II Software, P.O. Box No 672, South Croydon, Surrey, CR2 9YS. Telephone 081/657/1617. Specialist areas: utilities, quality PD & Shareware, system functions. Catalogue, introduction pack inc disk £1.00. Accept phone orders. No credit cards or direct debit. Open from 8am - 8pm. Full disks pick your own files 500 K=Bootable 800 K=Unbootable.
Magnetic Fields Shareware and Public Domain Software, PO Box 118, Preston, Lancashire, PR2 2AW. Telephone and Fax, (0772) 881190. Accept phone orders, credit cards and direct debit. Open 9am to 5pm Mon to Fri. We also do PC + ST.
MegaSoft, 78 Bockingham Green, Basildon, Essex, SS13 1PF. Telephone (0268) 559164. Catalogue, send two blank disks + Stamps. Accept phone orders through Megasoft membership codes. Do not accept credit cards or direct debit. Open 9am–11pm everyday. Over 1500 disks. You name it we stock it, £1.20 per disk.
Microland Bulletin Board, PO Box 13, Aldershot, GU12 6YX. Telephone and Fax (0252) 25841. Specialist areas Internet. Catalogue, only available online. Do not accept phone orders, credit cards/direct debit. Open 24 hrs.
N.B.S. 1 Chain Lane, Newport, I of W, PO30 5QA. Telephone (0983) 529594, Fax (0983) 821599. Specialist areas: PD, CLR Licenceware, Commercial Software, Manga Video. Catalogue FREE with S.A.E. Accept phone orders, credit cards and direct debit. Open office hrs.
NFA-PD, R. Monks, P.O.Box 42, Grimsby, South Humberside, DN33 1RY. Specialists areas, The PD house is currently A1200 orientated, NON-AGA titles are available if they work on an A1200. Catalogue disk + s.a.e. Do not accept phone orders, credit cards or direct debit. Orders usually dispatched same day. Catalogue disk uses point and click and saves orders to disk, also totals order with 10%off orders £10.00 or more. Prices £1.00 per disk inc p&p, 3 disk titles (e.g Grapevine 19) - £2.80
Nemesis PD, 126 Mallard Hill, Bedford, MK41 7QT. Tel: 0234 350 654. SAE for catalogue. Also User Group.
Numero Uno, 21 Burstall Hill, Bridlington, North Humberside, YO16 5NP. Telephone (0262) 671125. Specialise in a lot of A1200 stuff - beginners welcome. Catalogue costs a blank disk or 1st class stamp. Phone orders accepted buyer collects. Do not accept credit cards/direct debit. Open 4- 10pm on Wednesdays, 9am - 1pm + 6.30am - 10pm on school holidays & weekends. 75p a disk, 50p p+p.
Online PD, 1 The Cloisters, Halsall Lane, Formby, Liverpool L37 3PX. Telephone (0704) 834 335, Fax: (0704) 834 583 (phone voice line first) BBS: (0704) 834 583. Specialise in demos. Catalogue is 50p. They accept phone orders and Visa, Access, Mastercard and Eurocard. Open Mon–Sat 9am–6pm.
Orion PD, Mr Modarne, 14 Ouston Close, Wardley, Gateshead, NE10 8D2. Telephone 091/438/5021.
Paul Betteridge PD, 25 Cunningham Crescent, Bournemouth, Dorset BH11 8DN. Free catalogue.
Pathfinder PD, 41 Marion Street, Bingley, West Yorkshire, BD16 4NQ. Telephone (0274) 565205. Catalogue, Free if a s.a.e. is sent. Do not accept phone orders, credit cards or direct debit. Open 9.30am - 5pm. We have our 6,000 titles in our library and also our PC shareware.
PD Soft, 1 Bryant Avenue, Southend-on-Sea, Essex, SS1 2YD. Telephone (0702) 466933, Fax (0702) 617123. Specialist areas: Utilities and games. Catalogue Free. Accept phone orders, credit cards and direct debit. Open 9am–7pm (Mon–Sat). PC+Amiga + CD.
Penguin Public Domain, P.O. Box 179, Reading, Berkshire, RG3 3DD. Telephone none. Specialist areas Fred Fish and all other areas. Catalogue free but stamps appreciated. Do not accept phone orders, credit cards or direct debit. Postal only. All machines catered for 500/500+/600/1200.
Phils 'Aga' PD, 101 Grove Road, Gosport, Hampshire, PO12 4JJ. Specialist areas: 'Aga' based Amiga only. Catalogue send S.A.E. Do not accept phone orders, credit cards or direct debit. Open for mail order only. PD is 50p a disk.
Pinnacle PD, 134 Buarth-y-Capel, Ynysybwl Pontypridd, Mid Glam, CF37 3PA. Telephone (0443) 790996. Catalogue, disk £1.00 inc p&p.
Premier PD, 45 Fairfield Gardens, Eastwood, Leigh-on-Sea, Essex SS9 5SD. Tel: 0702 520 520. Offer a broad range, especially Comms s/w. Accept phone orders, but no credit cards. Open 4pm–9pm weekdays, 9am–5pm weekends.
Riverdene PDL, 30A School Road, Tilehurst, Reading, Berkshire, RG3 5AN. Telephone (0734) 452416, Fax (0734) 451239. Specialist areas: Video applications. Catalogue £1.00. Accept phone orders, credit cards and direct debit. Open 9am to 5.30pm, (24 hour answerphone). Est. since 1987.
Roberta Smith DTP, 190 Falloden Way, London, NW11 6JE. Telephone 081/455/1626. Specialist areas: utilities, education, animation. Catalogue .50p + .50p p&p or a blank disk + S.S.A.E. Accept mail order by return of post. Do not accept credit cards or direct debit. Open from 10am-6pm Mon to Fri, 9am-12.30pm Sat. We have a strong leaning to desk top media publishing.
Saddle Tramps PD, 1 Lower Mill Close, Goldthorpe, Rotherham, South Yorkshire S63 9BY. Telephone (0709) 888 127. Catalogue is 50p. Accept phone orders, but no credit cards or direct debit. Open all day, every day. New library, first catalogue disk, expanding daily. Stock small items, ie. boxes, mats, labels etc.
Scribble PD, 2 Hillside Cottages, Burstall, Suffolk. Telephone (0473)652588. Catalogue £1.00. Accept phone enquiries only. Do not accept credit cards or direct debit. Open from 09.30am - 5.30pm. Any PD/Shareware title can be ordered at no extra cost.
Seasoft Computing, The Business Centre, 80 Woodlands Ave, Rustington, Sussex, BN16 3EY. Telephone (0903) 850378. Specialises in Amiga Public Domain/ Licenceware/ CD ROMS/accessories etc. Catalogue free of charge with first order. Accept phone orders, credit cards and direct debit. Open 10am - 7pm Mon to Fri, until 5pm on Sat.
SHI Regional Virus Centre UK, 304 Leeds Rd, Eccleshill, Bradford, W. Yorks BD2 3LQ. Tel. + Fax: 0274 779 212. Specialise in virus killers. Open Mon–Fri 1pm–9pm. People can phone the free Virus Helpline on 0274 779 212 during the above hours.
Software Expressions, 117 Kennington Avenue, Bishopston, Bristol, BS7 9EX. Telephone (0272) 425987, Fax is the same number. Specialist areas: Preponderance of PD games. Catalogue Free. Accept phone orders, credit cards and direct debit, (except switch). 9.30am - 5pm. State Amiga models when ordering.
Startronics, 39 Lambton Road, Chorlton, Manchester, M21 1ZJ. Telephone 061/881/8994. Specialist areas: 1.3 Software. Catalogue Free to customers orders. Accept phone orders, credit cards and direct debit. Open 9.30am - 5pm.
Telescan Computer Services, PO Box 1, Thronton-Cleveleys, Lancs, FY5 1SH. Telephone (0253) 829292. Catalogue, disk catalogue - 3 stamps. Accept phone orders, credit cards and direct debit. Open 10am to 5pm.
The Official Amos PD Library, 17 Wick Farm Road, St Lawrence Bay, Southminster, Essex, CMO 7PF. Telephone and Fax (0621) 778804. Specialist areas: Amos programs, source-code disks, totally Amos disk magazine. Catalogue £1.00 disk s.a.e. for printed info. Do not accept phone orders, credit cards or direct debit. Open, postal only orders, queries and reasonable hour. We are the only Amos-only PD library in the UK, with the longest running disk magazine.
Vally PD, P.O. Box 15, Peterlee, Co Durham, SR8 1NZ. Telephone 091/587/1195, Fax 091/587/1195. Specialist areas: PD + Shareware for Amiga + PC, CD ROMS, + CLR Licenceware. Catalogue .75p inc p&p. Accept phone orders, credit cards and direct debit. Open 9am - 6pm. We are part of the 'UPD' group.
Virus Free PD, 139 Victoria Road, Swindon, Wiltshire, SN2 3BU. Telephone (0793) 432176, Fax (0793) 514187. Catalogue £1.00 or 4 x 1st class stamps. Accept phone orders and credit cards. Open 9.30am - 5.30pm Mon to Sat. Have been trading for 5 years in PD.
Visage Computers Public Domain Library, 18 Station Road, Ilkeston, Derbyshire, DE7 5LD. Telephone (0602) 444501, Fax (0602) 444501. Specialist areas: Amiga hardware, software and peripherals as well as PD. Catalogue .50p. Accept phone orders and credit cards, but not switch. Open 9am - 5pm Mon to Sat.
Your Choice PD, 39 Lambton Road, Charlton - cum - Hardy, Manchester, M21 0ZJ. Telephone 061/881/8994. Specialist areas: licenceware. Catalogue FREE with order. Accept phone orders, credit cards and direct debit. Open 9.30am - 5pm Mon Sat

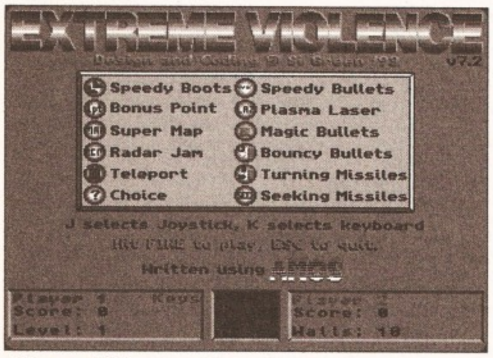
AMOS Action

You too could be rich and famous! Simon Green shows you how to make it big in the world of AMOS shareware.



A good game doesn't need spectacular graphics. The sprites in Extreme Violence are simple but functional (crap, to be more precise).

For me, one of the most interesting aspects of the Amiga has always been its vibrant Public Domain scene. Few other machines have such a huge and varied library of Public Domain software available for them. There are hundreds of thousands of pieces of Amiga software available in the Public Domain, and all for little or no cost.



Extreme Violence – a hugely successful and critically acclaimed AMOS shareware game. Did I mention that I wrote it?

Hundreds of new titles are released every week. The material ranges from complex utilities and applications to demos, animations and games. Sadly, the ways things are going at the moment, the Public Domain could soon be the only available source of new software for the Amiga!

AMOS makes it easy for people with relatively little programming experience, but with plenty of original ideas, to create their own Amiga software. Releasing your own software into the Public Domain can be very rewarding in itself, but if your product is good enough, you might even be able to make some money out of it.

SHARE YOUR WARES

Shareware initally seems like a rather strange and confusing concept. Shareware programs are freely distributable, so just like Public Domain programs you can copy and pass them round as much as you like. But the idea is that if you like the program and use it regularly, you should send a small payment to the author. But why should you pay for something that you've already got?

Well, in theory you do it to show your appreciation for the effort the author has gone to writing the program. After all, he or she isn't getting paid for it otherwise. But more usually the program is in some way "crippled" by having features removed or limitations added, so that in fact it is really just a demonstration of the full version. This provides an additional, and much more persausive reason to pay.

By "registering" the program with the author you will usually recieve the latest, full version of the software, and may even be sent updates as they become available.

Incredibly, the shareware concept does work. "DOOM", one of the most successful games ever on the PC, was initially a shareware product. My own shareware AMOS game "Extreme Violence" has so far generated more than 200 registrations.

This may not sound like many, but it greatly exceeded my expectations, especially since I only released it as shareware in an attempt to find out

LISTING – VECTORSPACE GAME

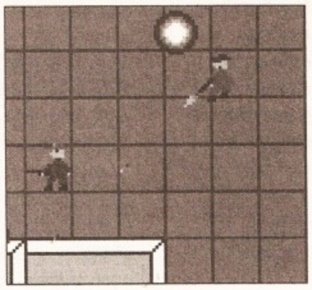
```
YS#
    A#=Atan(V#)
   AI=Int(A#*ANG45/45.0)
    TABLE(N)=AI
Next
'
ANG90=ANG45*2
ANG180=ANG45*4
ANG360=ANG45*8 : ANG360#=ANG360
'
' Create Sin and Cos look-up tables
Dim _SIN(ANG360,2),_COS(ANG360,2)
                 '
For N=0 To ANG360
    N#=N
    ANG#=N#*360.0/ANG360#
    _SIN(N,0)=Sin(ANG#)*THRUST
    _COS(N,0)=Cos(ANG#)*THRUST
    _SIN(N,1)=Sin(ANG#)*BV
    _COS(N,1)=Cos(ANG#)*BV
Next
'
' Array to store bullet info
' (n,0) = X co-ord
' (n,1) = Y co-ord
' (n,2) = X velocity
' (n,3) = Y velocity
' (n,4) = Active flag (True or False)
'
BULLETS=3
Dim B(BULLETS,4)
BC=1 : FC=1
'
' Array to store alien info
' (as above)
Dim A(10,4)
'
Repeat
    '
    LEVEL=1 : Rem      Level no.
    ALIENS=1 : Rem     No. of aliens
    SPEED=1000 : Rem   Alien speed
    GRAV=0 : Rem       Gravity
    LIVES=3 : Rem      No. of lives remaining
    '
Repeat
    _KILLED=False
    DEAD=0 : Rem   No. of aliens killed so far
    '
    ' Initialise ship position (wx,wy)
    SX=160 : SY=128
    WX=SX : Rol.l SHIFT,WX : WY=SY : Rol.l SHIFT,WY
    '
    ' Initialise ship velocity (vx,vy)
    VX=0 : VY=0
    '
    ' Initialise aliens to edges of screen
    For N=1 To ALIENS
       E=Rnd(3)
       If E=0 Then A(N,0)=0 : A(N,1)=Rnd(256)
       If E=1 Then A(N,0)=320 : A(N,1)=Rnd(256)
       If E=2 Then A(N,0)=Rnd(320) : A(N,1)=0
       If E=3 Then A(N,0)=Rnd(320) : A(N,1)=256
       Rol.l SHIFT,A(N,0)
       Rol.l SHIFT,A(N,1)
       '
       ' Give alien random velocity
       A(N,2)=Rnd(SPEED)-SPEED/2
       A(N,3)=Rnd(SPEED)-SPEED/2
       A(N,4)=True
    Next
    '
    ' De-activate all bullets
    For N=1 To BULLETS : B(N,4)=False : Bob Off 1+N : Next
    '
    ' Draw titles etc.
    Autoback 1
    Cls : Screen Swap : Cls
    Box 0,0 To 319,255
    Text 1,8,"VectorSpace v0.2"
    Text 245,8,"Level:"+Str$(LEVEL)
    For N=1 To LIVES
       Paste Bob(N-1)*10,8,1
    Next
    Autoback 0
    '
    Repeat
       ' Get mouse pointer position (mx,my)
       MX=X Screen(X Mouse) : Rol.l SHIFT,MX
       MY=Y Screen(Y Mouse) : Rol.l SHIFT,MY
```

whether anybody really did make any money out shareware. I'd like to take this opportunity to say that (after more than a year and a half) the registration offer is no longer open – so please don't send me any more money!

DISTRIBUTION

The key to shareware success is getting your program seen by as many people as possible. One of the easiest ways to do this is to get your program on a magazine coverdisk. This way you are guaranteed that almost everyone who buys the magazine will at least look at your program. Seeing as many of the Amiga magazines still have circulations in the tens of thousands, this adds up to a lot of potential customers. I was lucky enough to get "Extreme Violence" on the coverdisk of "Amiga Power" magazine in April 1993. Although it was also available in the Public Domain, most of the registrations I got came from Amiga Power readers. It is worth noting that some magazines will pay you directly for good, exclusive software for their coverdisks.

Another way to get your program seen is to send copies of your disk to a few of the major PD companies (17 Bit Software, PDSoft etc.). If they accept it (and most of them aren't very picky) they will usually offer you one of their own PD disks in return, so it doesn't really cost you anything. If your program is any good, you'll find that it will soon spread, virus-like, between PD companies, and eventually on to BBSs and the Internet and, from there, all over the world. If you're lucky, it might even get reviewed in the PD sections of some of the Amiga magazines, which is always good publicity.



Playability is the key ingredient in any game. Get your friends to play-test it as much as possible.

Always be prepared for a larger response than you expect. Brian Bell, whose game "Charlie Chimp" was published on an Amiga Format coverdisk after it won the "Games Master" games writing competition, received more than 3000 registrations in a matter of weeks. It certainly can get a bit tiresome having to copy and send off disks all the time, but I guess that's the price of fame and fortune!

AMOS IN DISGUISE

There are several ways in which you can try and disguise the fact that your program is written in AMOS. My advice is to not bother – anyone with any technical skill can find out anyway, and most people are more likely to be worried about what your game actually looks and plays like rather than what programming language it's written in. On an interesting sidenote, I'm reliably informed that there are a number of full-price commercial games that are written in AMOS, including "JetStrike", "Valhalla" and "Genesia". Yikes!

EXTREME SOURCE

Those of you sensible enough to subscribe to Amiga Shopper should find on this month's subscribers' disk nothing other than the complete AMOS source code to my critically acclaimed game "Extreme Violence". This has never been released before, but seeing as this is my last article, I thought I'd give you all a little going-away present. I wrote the game quite a while ago now, so be warned that some of the programming techniques it uses are a little "unconventional", to say the least. I would certainly do things differently if I were to rewrite E.V. today, but you should still be able to learn a lot from studying the code. And now, at last, you will be able to tailor the game to fit your own twisted desires.

MOUSEY ASTEROIDS

If you don't subscribe to the magazine and are now feeling a bit left out, don't worry. For your entertainment I now present "VectorSpace", a fun little game for you to type in and play. The listing is a bit longer than usual, but I hope you'll agree it's worth the effort of typing it in.

The game itself is admittedly somewhat similar to the classic old video game "Asteroids". The difference is that this version has a rather unusual mouse-based control method, similar to the one used in "Cannon Fodder". The ship always points towards the mouse pointer. Pressing the left mouse button causes the ship to accelerate in the direction it is pointing. The simulation includes friction, so when you let go of the thrust button the ship will gradually come to a halt.

If you keep the button held down you'll find the ship tends to oscillate around the mouse pointer. The right mouse button fires a bullet in the direction the ship is pointing, i.e. towards the

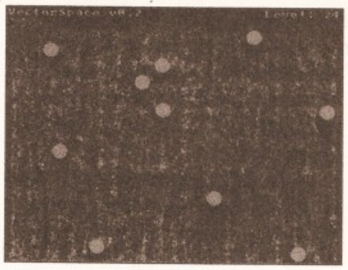
```
MK=Mouse Key
'
' Calculate angle between ship and mouse pointer
DX=MX-WX
DY=MY-WY
'
DXABS=Abs(DX)
DYABS=Abs(DY)
'
If DYABS<DXABS
   I=(DYABS*ENTRYS)/DXABS
   A=TABLE(I)
Else
   I=(DXABS*ENTRYS)/DYABS
   A=ANG90-TABLE(I)
End If
'
If DX>=0
   If DY>=0
      ANG=A
   Else
      ANG=ANG360-A
   End If
Else
   If DY>=0
      ANG=ANG180-A
   Else
      ANG=A+ANG180
   End If
End If
If ANG=ANG360 Then ANG=0
'
' Move ship in current direction if left mouse button pressed
If Btst(0,MK)
   Add VX,_COS(ANG,0)
   Add VY,_SIN(ANG,0)
End If
'
' Fire bullet if right mouse button pressed
If Btst(1,MK)
   If FC=10
      Shoot
      B(BC,0)=WX : B(BC,1)=WY
      B(BC,2)=VX+_COS(ANG,1) : B(BC,3)=VY+_SIN(ANG,1)
      B(BC,4)=True
      Add BC,1,1 To BULLETS
      FC=0
   Else
      Inc FC
   End If
Else
   FC=10
End If
'
' Move and draw bullets
For N=1 To BULLETS
   If B(N,4)
      SX=B(N,0) : Ror.l SHIFT,SX : SX=SX and MASK
      SY=B(N,1) : Ror.l SHIFT,SY : SY=SY and MASK
      BBOB=1+N
      Bob BBOB,SX,SY,65
      Add B(N,0),B(N,2)
      Add B(N,1),B(N,3)
      Add B(N,3),GRAV
      '
      ' Bullets die at edges of screen
      If B(N,0)>MWX or B(N,0)<0 or B(N,1)>MWY or B(N,1)<0
         Bob Off BBOB : B(N,4)=False
      End If
   End If
Next
'
' Move and draw aliens
For N=1 To ALIENS
   If A(N,4)
      SX=A(N,0) : Ror.l SHIFT,SX : SX=SX and MASK
      SY=A(N,1) : Ror.l SHIFT,SY : SY=SY and MASK
      ABOB=1+BULLETS+N
      Bob ABOB,SX,SY,66
      Add A(N,0),A(N,2)
      Add A(N,1),A(N,3)
      Add A(N,3),GRAV
      '
      ' Aliens bounce off edge of screen
      If A(N,0)<0 : A(N,0)=0 : A(N,2)=-A(N,2) : End If
      If A(N,1)<0 : A(N,1)=0 : A(N,3)=-A(N,3) : End If
      If A(N,0)>MWX : A(N,0)=MWX : A(N,2)=-A(N,2) : End If
      If A(N,1)>MWY : A(N,1)=MWY : A(N,3)=-A(N,3) : End If
      '
      ' Check for collision between alien and bullets
      If Bob Col(ABOB,2 To 1+BULLETS)<>0
         ' If so kill alien
         Boom
         Bob Off ABOB : A(N,4)=False
```

continued on page 88

mouse pointer. If the ship is stationary then the bullet should travel through the point where the mouse pointer is located, but if the ship is moving things are more difficult. This control method can be strange to begin with, but you'll soon get used to it.

The aim of the game is simple. All you have to do is shoot all the "aliens" (which look suspiciously like filled circles), whilst avoiding crashing into them. Once you've killed all the aliens on the screen, you'll advance to the next level. One each level, one extra alien is added (up to a maximum of ten), and their speed increases. After level ten, gravity is also introduced, which makes things even more difficult. I defy anyone to get past level twenty!

The program is completely self-contained, since it creates its own graphics from data within the program. When you run it for the first time you will see the program drawing the ship sprites. Once the program has done this once, there is no need to do it again since the bobs will be stored in the AMOS bob bank along with the program. You can then remove the line of the program that reads "Gosub MAKEBOBS".



VectorSpace – a simple but fun mouse-controlled Asteroids game for you to type in and play!

You might like to try editing the bobs using the AMOS sprite editor, since I admit that they're not quite up to the standard of "Super Stardust" as they stand. There are also various variables in the program that you can try changing to alter the parameters of the game.

Despite using only integer arithmetic and making intensive use of look-up tables, the game does slow down a bit when there are lots of objects on the screen, so it's a good idea to compile it with the AMOS compiler if you possibly can.

PARTING IS SUCH SWEET SORROW

Well, that brings us to the end of this month's "Amos Action", and sadly to the end of my brief residence as the host of these pages. I hope you've all enjoyed it as much as I have. I'd like to thank Richard Baguley and all those at Amiga Shopper who over the past months have done such a good job of taking my quirky (and invariably late) copy and transforming it into something resembling coherent articles.

Respect must also go to Cliff Ramshaw for giving me that all important first break way back in July of last year. Most of all I'd like to thank all those people who've been kind enough to send me nice letters, and I only apologise that I haven't been able to reply to you all personally. I love you all. Thanks for reading. See-ya! AS

continued from page 87

```
                  Inc DEAD
               End If
            End If
         Next
         '
         ' Move the ship according to its velocity
         Add WX,VX
         Add WY,VY
         '
         ' I don't think you appreciate the gravity of☛
the situation...
         Add VY,GRAV
         '
         ' Give me some friction, baby...
         VX=(VX*31)/32
         VY=(VY*31)/32
         '
         ' Ship bounces off edge of screen
         If WX<0 Then WX=0 : VX=-VX
         If WY<0 Then WY=0 : VY=-VY
         If WX>MWX Then WX=MWX : VX=-VX
         If WY>MWY Then WY=MWY : VY=-VY
         '
         ' Work out screen co-ords of ship and draw it
         SX=WX : Ror.l SHIFT,SX : SX=SX and MASK
         SY=WY : Ror.l SHIFT,SY : SY=SY and MASK
         Bob 1,SX,SY,ANG+1
         '
         ' Check for collision between ship and aliens
         If Bob Col(1,1+BULLETS+1 To 1+BULLETS+ALIENS)
            ' If so kill ship, decrement lives
            _KILLED=True : Dec LIVES : Boom
            For N=POS To POS+64 Step 4
               Bob 1,SX,SY,N mod 64
               Bob Clear : Bob Draw
               Screen Swap : Wait Vbl
            Next
         End If
         '
         Bob Clear : Bob Draw
         Screen Swap
         Wait Vbl
      Until _KILLED or DEAD=ALIENS
      '
      If Not _KILLED
         ' Advance to next level
         For N=0 To 96 Step 4
            Play %1001,N,1
            Play %110,96-N,1
         Next
         '
         Inc LEVEL
         If ALIENS<10 : Inc ALIENS : End If
         If LEVEL>10 : Add GRAV,2 : End If
         Add SPEED,100
      End If
      '
   Until LIVES=0
   '
   ' End of game
   Locate ,10 : Centre "G A M E  O V E R"
   Screen Swap
   GAMEOVER=False
   Wait 50
   Repeat : Until Mouse Key=0
   Repeat : Until Mouse Key<>0
   Cls : Screen Swap : Cls
   Bob Off
   '
Until 0
End
'
MAKEBOBS:
' Create ship bob
NUMPOINTS=3
SIZE=5 : ROTS=64
CX=8 : CY=8
ANGSTEP#=360.0/ROTS
Dim P(NUMPOINTS,1)
Dim RP(NUMPOINTS,1)
'
Restore
For N=0 To NUMPOINTS
   Read X,Y
   P(N,0)=X*SIZE
   P(N,1)=Y*SIZE
Next
'
' Ship object data
Data 1,0,-1,1,0,0,-1,-1
'
B=1 : Degree
'
For A#=0 To 360 Step ANGSTEP#
   ' Rotate and draw ship
   For N=0 To NUMPOINTS
      RP(N,0)=(P(N,0)*Cos(A#)-P(N,1)*Sin(A#))+CX
      RP(N,1)=(P(N,0)*Sin(A#)+P(N,1)*Cos(A#))+CY
   Next
   '
   Cls
   Draw RP(0,0),RP(0,1) To RP(1,0),RP(1,1)
   Draw RP(1,0),RP(1,1) To RP(2,0),RP(2,1)
   Draw RP(2,0),RP(2,1) To RP(3,0),RP(3,1)
   Draw RP(3,0),RP(3,1) To RP(0,0),RP(0,1)
   '
   Get Bob B,0,0 To 16,16
   Box 0,0 To 15,15
   Hot Spot B,CX,CY
   Inc B
Next
'
' Create bullet bob
Cls 0
Bar 0,0 To 1,1
Get Bob 65,0,0 To 2,2
'
' Create alien bob
Cls 0
Circle 8,8,7 : Paint 8,8
Get Bob 66,0,0 To 16,16
Hot Spot 66,7,7
'
Cls 0
Make Mask
Return
```

The symbol ☛ means do not type a return – keep typing to the end of the next line. ▼☛ means type a space, then keep typing to the end of the next line.

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Birmingham 68000 in Birmingham. Contact Mike Bedford-White, 16 Westfield Rd. Acocks Green, B'ham B27 7TL.

Birmingham Software Exchange Service. Contact Michael Pun ☎ 021 459 7576.

Coventry Coventry and Warks Commodore Computer Club. Contact Will Light ☎ 0203 413511.

Derby Living Poets Society. Publication and appraisal of creative writing. Sean Woodward. Fido 2:2503/104; 11. Menin Road, Allestree, Derby,DE22 2NL, UK.

Hereford Hereford Amiga Group Help. Contact John Macdonald ☎ 0981 21414.

Leicester NFA. Contact NFA Productions (0533) 661 610. PO Box 323, Cambell St. Leicester.

Loughborough Leicestershire Amiga Users, Contact Daz or Eddy ☎ 0533 375 147 or (0509) 267 198. PO Box 10, Mountsorrel, Loughborough, Leicestershire LE12 7ZZ

Loughborough BR & CJ Computer Club. Contact B Robinson ☎ 0392 72889 or ☎ 03922 841296.

Melton Mowbray Melton Amiga Users. Contact Stephen Mowbray ☎ 0664 63421.

Nottingham Robin Hood Amiga Users. Contact Kristian Denman (0777) 838 248. 2 Beech Walk, Elkesley Nr Retford, Notts DN22 8BB.

Nottingham East Midlands Amiga User Group. Contact Richard Haythorn ☎ 0602 298075.

Solihull Deluxe Cheats Disk User Group. Contact Steven Frew, 96 Campden Green, Solihull, West Midlands B92 8HG.

Solihull Sid The Kid Amiga. Contact Sid Reeves, ☎ 021 705 8619.

Solihull Solihull Computer Users Group. Contact Rich or Lee, 41 Leafield Road, Solihull, W. Midlands B92 8NZ.

Stoke-on-Trent The Amiga Studio. Contact Dave Rose (0782) 815 589, 25 Zodiac Drive, Chell, Stoke-on-Trent, Staffordshire, Midlands ST6 6NJ

Stoke-on-Trent ANDY PD contact Andrew Shufflebotham ☎ (0782) 775014, 2 Sussex Drive, Kidsgrove, StokeonTrent, Staffs, ST7 1HG.

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Telford Shropshire Amiga Link. Contact N Cockayne ☎ 0952 591376.

Telford West Midlands Amiga Club. Contact Kevin Genner Telford Snooker Centre, Canongate, Oakengates, Telford, Shropshire.

Witney Cacophony (Unlimited). Contact Mark Wickson, 49 Perrott Close, North Leigh, Witney, Oxon OX8 6RU.

NORTHEAST

Balby Warpdrive. Contact B Scales ☎ 0302 859715.

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Barnsley Access Amiga User Club. Contact Mark Grimshaw, 20 Lilydene Ave, Grimethorpe, Barnsley, South Yorkshire S72 7AA.

Barnsley Amiga Programmers' User Group. Contact Andrew Postill, 2 Selby Road, Newlodge, Barnsley, South Yorkshire S71 1TA.

Catterick Champion PD Club. Contact Steve Pickett, 31 Somerset Close, Catterick, N Yorkshire DL9 3HE.

Chester-le-Street Chester-le-Street 16-Bit Computer Club. Contact Peter Mears ☎ 091 385 2939.

Darlington Darlington Commodore Users Club. Contact Steve Wheatley, 1 Ruby St, Darlington, Co Durham DL3 0EN.

Darlington Jemsoft Amiga Users. Contact Danwood, 3 Cavendish Drive, Darlington, Co Durham DL1 2GQ.

Darlington National Amiga Users Group. Contact Membership Secretary, PO Box 151, Darlington, County Durham DL3 8YT. ☎ 0325 352260

Durham The Amiga Club. Contact G Starling, 31 Pine Lea, Brandon, Durham DH7 8SR.

Harrogate Club 68000. Contact Chris Hughes ☎ 0423 891910.

Houghton-le-Spring Club Amiga. Contact Chris Longley, 5 Bowes Lea, Shiney Row, Houghton Le Spring, Tyne and Wear.

Keighley Pennine Amiga Club. Contact Neville Armstrong ☎ 0535 609263.

Mickley Nothing But AMOS Monthly disk magazine. Contact Neil Wright ☎ 0661 842292.

North Berwick East Lothian Amiga Group. Contact Mr J Curry ☎ 0620 2173.

Otely Harley's PD Swaperama. Contact G Varney ☎ 0943 466896.

Rotherham Software City. Contact N Richards

USER GROUP IN FOCUS

Welcome to a new feature to this section of the magazine – User Group in focus. You can expect to see this from time to time. It will hopefully be a regular thing, but depending entirely on how many interesting User Groups ask to be featured... so get writing if you want to be seen here. If you are doing something different with the Amiga, then let us know about it.

London-based Amigaholics are one of the best known and oldest User Groups around, so we decided to have a little chat with its founder Kevin Bryan about the user group's beginning and his opinions on the Amiga and its future.

How long have you been running Amigaholics and why did you decide to start?

The group was formed about four years ago. The main reason that I decided to start running Amigaholics was that I was quite annoyed about some incorrect advice that was given by an Amiga magazine, and decided that I could do a better job.

How many members do you have?

About 150 at the moment.

Are they all in the London area?

No, they are spread all over the world – about 35 are in the London area and there are others in Brazil, Turkey, Finland and one in Malaysia.

What's the most common use that your members put their Amigas to?

I'd say we have very few games players, they are mainly into graphics, video and DTP. We hold regular workshops that deal with these topics, to help our members make the most of these areas.

What do you and your members think of the current Commodore situation?

We're very upset about it, we sometimes feel that Commodore are not being entirely honest with us – but that's the way Commodore have been right down the line. I hope Commodore UK will get it.

What are your hopes for the Amiga's future?

Well, I rather hope that it will be targeted at a different customer – instead of being marketed at games-players it would nice to see the serious side of the Amiga pushed a bit more.

☎ 0709 526092.
Sheffield Steel PD. Contact James Whitehead, 33 Middle Cliffe, Drive Crowedge, Sheffield S30 5HB.
Spalding TDM. Contact Gedney Marsh, Spalding, Lincolnshire.
Stocksfield Blitz User Group. contact Neil Wright, 39 Riding Dene, Mickley Square, Stocksfield, Northumber-land, NE43 7DL.
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Tunstall The Amiga Studio. Contact Dave Rose ☎ 0782 815589.
Washington Mainly Amiga. Contact Ray Scott ☎ 416 9189.
Whiteley Bay Club Futura. Contact G Holland, 16 Hermiston, Monkseaton, Whitley Bay, Tyne and Wear NE25 9AN.

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Blackburn Blackburn Amiga Users Group. Contact Eric Hayes ☎ 0254 675625.
Blackpool Channel Z Diskmag. Contact Darren Busby, 3 Edelston Rd, Blackpool FY1 3HN.
Fleetwood Fylde Computer Club. Contact Colin Biss ☎ 0253 772502.
Lytham St Annes Amiga Users Group Part 2. Contact Andy Wilkinson ☎ 0253 724607.
Macclesfield Computer Club (Est 1983). Contact D. Latham (chairman) ☎ (0625) 615 379, Fax: (0625) 429 667. c/o Grantham House, Macclesfield, Cheshire SK10 8NP.
Oswaldtwistle Hyndburn Amiga Users Club. Contact Nigel Rigby ☎ 0254 395289.
Skelmersdale Computeque. Contact Steve Lalley ☎ 0695 31378.
Stamford Under 18 Only. Contact Joe Locker ☎ 0780 64388

SCOTLAND

Angus Amiga CDTV club. Contact James Robertson ☎ 0356 623078, 22A High St, Brechin.
Bathgate Lothian Amiga Users Group. Contact Andrew Mackie, 52 Birniehill Ave, Bathgate, W Lothian EH48 2RR.
Cowdenbeatrh Amiga FX. Contact Ryan Dow ☎ 0383 511 258.
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Dundee Tay-Soft PD Club. Contact Dave Thornton ☎ 0382 505437.
Dunfermline Dunfermline Sound & Vision Club. Contact Stan Reed, 7 Maxton Place, Rosyth, Dunfermline, Fife KY11 2DG.
East Lothian Amiga Club (every 2nd week). Derek Scott ☎ 0620 823137, (Saturday 1 – 4pm). Bridge Centre, Poldrate, Haddington, East Lothian, Scotland.
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Inverness Highland PD.Contact David Paulin ☎ 0463 242431.)
Johnstone Using AMOS. Contact Colin McAllister ☎ 0505 331342.
Perth Perth and District Amateur Computer Society. Contact Alastair MacPherson 137 Glasgow Rd, Perth.
Redburn Redburn Computer Users Group. Contact Ruby Anderson ☎ 0294 313624.
W. Lothian Amiga Computer User Club. Contact Alistair Lyons, 18 Braehead, Bo'ness, W. Lothian, Scotland EH51 9DN.

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Carmarthen Bloomfield Video and Computing. Contact Mrs Beryl Hughes ☎ 0267 237522.
Clwyd ShieldSoft PD. Write to 26 Doren Avenue, Rhyl, Clwyd LL18 4LE, ☎ 0745 134 3044.
Clwyd Solo (Amiga). Contact Mike, 26 Doren Avenue, Rhyl, Clwyd LU8 4LE. ☎ 0745 343044
Neath Amiga Navigation. Contact Dave Thomas 4a, Allister St, Neath, W Glamorgan.)
Powys Blue Bedlam. Contact Michael Grant ☎ 0873 811791.

N IRELAND

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N Ireland Digital Intensity (diskmag). Contact Simon Denvir, 40 Old Cave Hill Rd, Belfast BT15 5GT.

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Angus Amiga Musicians Club. Contact Gavin Wylie, Guthrie Street, Carnoustie, Angus.
Basingstoke AMOS Programmers Exchange. Contact J Lanng, 7 Majestic Rd, Hatch Warren, Basingstoke, Hants RG22 4XD.
Branston Fen Amiga Boatowners. Contact D Beet Lock, Branston Fen, Lincolnshire LN3 5UN.
Braunston Nr Daventry GFA Basic Forum. Contact J Findlay ☎ 0788 891197
Braunston, Nr Daventry Amiga E Support Group. Contact John Findlay ☎ 0788 891197.
Broadstairs AMOS Programmer Club. Contact Gareth Downes-Powell, 6 Brassey Avenue, Broadstairs, Kent CT10 2DS.
Chelmsford Independent Commodore Products Users Group. Contact David Elliott ☎ 0245 328 737
Durham, Under 18 PD User Group (JB's PD). Contact J Blackburn, Longridge, Potters Bank, Durham DH1 3RR.
Glasgow 24-bit Club. Contact Gordon Keenan, 24-bit Club, 6 Skirsa Square, Floor 1, Glasgow G23.
Highfields CDTV User Group. Contact Gary Ogden, ☎ 0785 227059.
Lingfield In Touch Amiga. Contact P Allen, ☎ 0342 835530, PO Box 21, Lingfield, Surrey RH7 6YJ.
London (Richmond) Micro Academy. Contact Don Pavey ☎ 081 878 1075.
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Macclesfield Independent Commodore Products Users Group. Contact Peter Richardson ☎ 0298 23644
Maidenhead Independent Commodore Products Users Group. Contact Mike Hatt ☎ 0753 645 728.
Manchester CDTV Users Club. Contact Julian Lavanini, 113 Fouracres Rd, Newall Green, Manchester M23 8ES.
New Whittington Digital Music Club. Contact Roger Hunt ☎ 0246 454280.
Normanton BASIC Programmers' Group. ContactMark Blackall ☎ 0924 892106.
Rochford Ray Tracers. Contact Neil Hallam, 12 Meesons Mead, Rochford, Essex SS4 1RN.
Romford Phoenix Demo. Contact Frank ☎ 081 597 4661.
Rotherham Marksman (Trojan Phazer user group). Contact David Green, 67 Thicket Drive, Maltby, Rotherham, S Yorkshire S66 7LB.
Solent Independent Commodore Products Users Group. Contact Anthony Dimmer ☎ 0705 254969
Swindon Amiga Video Producers' Group. Contact J Strutton ☎ 0793 870667 before 9pm.
Swindon MUG – MED Users Group. Contact Richard Bannister, 6 Glevum Rd, Stratton St Margaret, Swindon SN3 4AF.
Wallington Bible Bureau.Contact AD ☎ 081 669 7485.
Ware Gamer-Link. Contact Stu, 28 Churchfield, Ware, Herts SG12 0EP.
Witham Video Visuals. Contact Chris Brown, 4 Lavender Close, Witham, Essex CM8 2YG.
Workington AMOS Programmers Group. Contact John Mullen at 62 Lonssdale St, Workington, Cumbria CA14 2YD.

OVERSEAS

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Australia Comp-U-Pal. Contact Comp-U-Pal, 116 Macarthur Street, Sale, Victoria 3850, Australia.
Belgium AUGFL vzw. Contact Lieven Lema, Meesberg 13, 3220 Holsbeek, Belgium.
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France Maritime Amiga Club. Contact CDR K Osei, GN Ships Refit Office, 51 Rue de la Bretonniere, 50105 Cherbourg, France. ☎ 33 33225447.
Germany Royal Air Force Amiga Club. Contact Stan Young, HMF RAF Laarbruch, BFPO 43.
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Greece Amiga Pros User Group Greece. Contact Stefanos Siopoulos, 52 Silivrias Str., N. Smyrni 17123, Athens, Greece, ☎ 01/9349963.
India Indian Amiga Friends. Contact Bilal, 46 Paragon 405 Lokhandwala Complex, Andheri (W), Bombay-400058.
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Ireland AMOS Users.Contact Brian Bell, 8 Magnolia Park, Dunmurry, Belfast BT17 0DS.
Ireland City Centre Amiga Group. Contact Patrick Chapman, 70 Ballygall Crescent, Finglas East, Dublin II, Ireland, ☎ 345035.
Ireland CUGI Commodore Users Group of Ireland. Contact Geoffrey Reeves, c/o St Andrew's College, Booterstown Avenue, Blackrock, Co Dublin. ☎ +353 1 288 3863.
Ireland Navan Computer Club. Contact Mark Arnold, Cannistown, Navan, Co Meath, Eire ☎ 046 21078.
Ireland Northside Amiga Group. Contact William Kelling, 10/A Rainsford Avenue, Dublin 8, Ireland ☎ 01 532 807.
Ireland Software Exchange Club. Contact Michael Lacey, Fern's Post Office, Enniscorthy, Co. Wexford, Republic of Ireland.
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Malta Malta Amiga Club. Contact Zappor, PO Box 39, St Julians, Malta, ☎ 440453
Portugal. Centro Amiga/Via Lactea BBS, Rui Costa, 351 01 888 2245/49, Largo do Martim Moniz-C,C, Mouraria, 1 loja 408-1100 Lisboa, Portugal.
Portugal Software Asylum. Sid Sanches, Portugal ☎ 062 831566. Apartado 6156, 3000 Coimbra, Portugal.
Singapore Singapore Sling. Contact Eric Chai ML, Block 4 #14-413, Pandan Valley, Singapore 2159, ☎ 65 4680630.
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Sweden 32-bit ware. Contact 32-bit ware, Ekorrstigen 10, 147 63 Tumba, Sweden.
Switzerland Amiga User Group Switzerland (AUGS) Contact AUGS ☎ ++41 34 45 3078. Bahnhofstr. 7, CH–3426 Aefligen, Switzerland. BBS: +41 (0) 62 44 32 27. We have our own Net on several Swiss Amiga BBSs called "AUGS-Net".
USA Japan Amiga Group.Contact: Rick Gardaya, PSC 78 Box 3876, APO AP 96326 USA.

Note: this list is provided as a free service for amateur, non-profit-making user groups. Amiga Shopper does not endorse or recommend any particular group and cannot be held responsible for any possible losses.

WHAT ARE YOU UP TO?

Here at Amiga Shopper we spend our days pondering on what you are all up to. Please set our minds at peace – write in and tell us about your user group. What do you do? Who is in it? Have you organised some special event/project lately? We are extremely nosy – we want to know everything, right down to the juicy details!

We could make you the User Group of the Month and as such you will be awarded a very special (secret) price.

Get writing

SEND IN YOUR DETAILS!

***Amiga Shopper* wants a truly comprehensive list of all the Amiga user groups worldwide. If your user group isn't on this page, send the form to *Amiga Shopper* User Groups, 30 Monmouth Street, Bath BA1 2BW.**

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Assembler Part 4

Toby Simpson greets the world with a jolly "Hello World" in this fourth gripping episode of our Assembler saga.

In last month's thrilling instalment we introduced stacks and subroutines in 68000 assembly language, with the promise that we might actually do something *interesting* this month. Of course, it requires a very *different* definition of the word "interesting", but in this gripping episode we'll write a program which shows "Hello World" on the CLI or Shell window.

Astonishing stuff, but surprisingly difficult in Assembly Language. In a high level language, such as 'C', this sort of operation is a breeze:

```
#include <stdio.h>

void main(void)
{
printf("Hello World\n");
}
```

The catch is, when you compile this program under something like SAS C, you'll end up with a final executable of about 10K. This may not sound like much, but it's a vast quantity more than it actually needs to be, as we will discover. The final executable which we will create this month is 147 bytes, yes, that's about 70 times smaller; and what's more, as you learn more about Assembly Language programming over the months, you'll be able to shave that down even further (to about 100 bytes!). Goodness, how is this possible?

Part of this is because compilers aren't as good at generating efficient machine code as human beings (although this is not necessarily the case on some very advanced MicroProcessors). C compilers will insert all sorts of other code into the program that you don't need, and won't use. Modern C compilers are getting much better at optimising this sort of redundant code out of a final executable program.

Of course, it may be much smaller if you write it in Assembly language, but as we've learnt in previous months, it's not all good news with Assembly Language programming. Our entire "Hello World" program is 71 lines long (including comments), whereas the C equivalent is five lines long. Programming any application in Assembly Language is a time consuming affair, but the control you have over the processor is enough for some people.

For those of you who have not already had a glance, the full listing for the 68000 version of the C program above is shown in Listing 1. You'll recognise a whole bunch of stuff we've learnt already, but quite a lot of it will be new.

AMIGA SHARED LIBRARIES AND MACROS

A library, in Amiga terms, is simply a collection of sub-routines you can use grouped by the type of thing that they do. For example, the "dos.library" contains a range of sub-routines for AmigaDOS, such renaming a file, or reading data from a file. "graphics.library"'s purpose should be pretty obvious, it contains drawing and other graphics related operations.

The Amiga has a whole bunch of these libraries, some are built into the Kickstart ROM, and some are on your workbench disk. In order to make use of one of them, you have to ask the operating system where it is in memory, a process referred to as "Opening a Library". The result of opening a library is called the "Library Base".

Since the function to do this is in a library itself, you can probably see our initial problem! For this reason, one special library, called "exec.library" has its Library Base in memory location $04. Let's illustrate this with a small example, and open the "dos.library", so that we can make use of the subroutines (more properly referred to as "functions") inside it:

```
        move.l      $04,a6
        move.l      #$00,d0
        lea         DosName,a1
        jsr         -552(a6)
        move.l      d0,DosBase
```

Let's look at this line by line.

Firstly, there is not one instruction here that we have not met somewhere else, so you should at least get the gist of what is going on. In the first line, we read the exec.library's base into A6. A6 is special when you program Assembly Language on the Amiga, it is the register we use to store the Library Base. When you call *any* Amiga library function, it will assume that its base is held in A6.

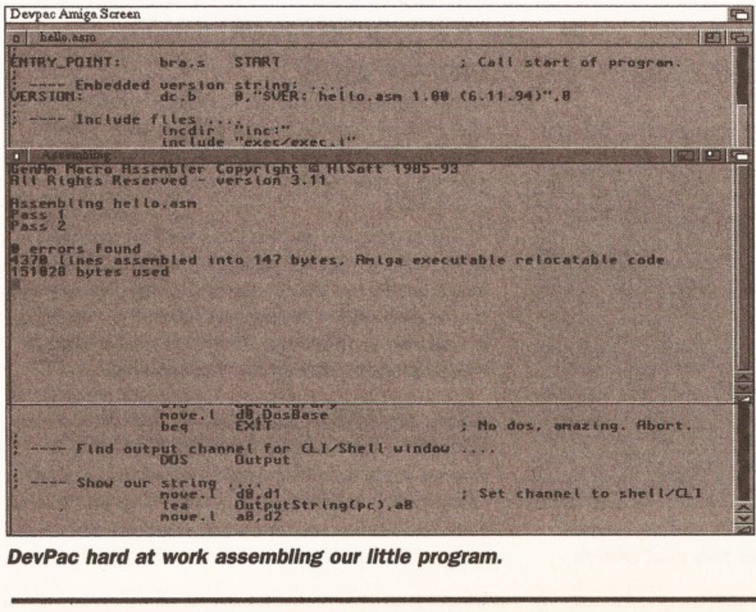
Having read the library base in, we then move the value 0 into D0. Why do we do this? The OpenLibrary function in exec.library expects two registers to be set up when you call it. The first is A1, which should contain a pointer to the library name you wish to open. This should be what's called a "null terminated string", a collection of bytes containing ASCII codes for the name of the library, with a zero byte to mark the end.

We can define such a string using the "dc.b" directive, which we have used before:

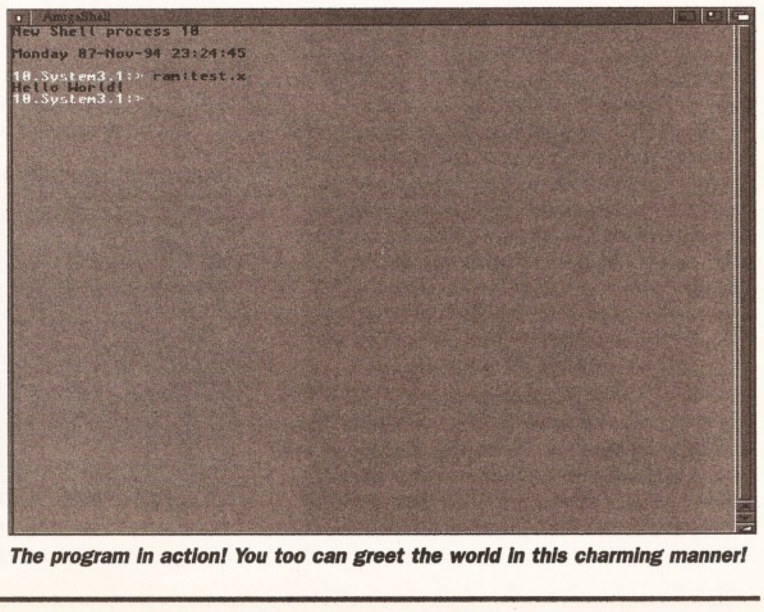
```
DosName: dc.b  "dos.library",0
```

...this causes the 12 bytes of memory starting at DosName to contain the values for d, o, s etc... and finally a 0 at the end. The second register is D0, which the exec.library expects to contain the "minimum version of this library you will accept". See the box on page 96 for a list of current version numbers, and how they relate to the various Kickstarts out there.

You'll notice we specify 0 as the version; this means that we are not fussed which version the user has, as we're going to use basic functions which have been present in dos.library since



DevPac hard at work assembling our little program.



The program in action! You too can greet the world in this charming manner!

KICKSTART VERSIONS IN CURRENT USE

V33	**Kickstart 1.2**
V34	**Kickstart 1.3 (A500's, A2000's etc...)**
V35	**A special version of Kickstart 1.3 to support the Commodore A2024 monitor.**
V36	**The early version of Kickstart 2, versions 2.00 to 2.02**
V37	**The release version of Kickstart 2, 2.04. (A600's, A500+'s)**
V38	**Kickstart 2.1**
V39	**Kickstart 3.0 (A1200's, A4000's)**
V40	**Kickstart 3.1 (CD32's and all those who have upgraded)**

Kickstart 1.0, back in 1985! But, if you are using functions in the dos library which were only present from Kickstart 2, you would want to specify a version so that you could abort if the user didn't have it.

After setting up our registers, we then perform a rather odd looking JSR instruction:

```
        jsr    -552(a6)
```

This means, "Jump to the location which is 552 bytes back from the contents of register A6". To understand this, let's briefly look at what a Library base actually is. It is a pointer to a jump-table. So what is a jump-table? Well, it looks a bit like this:

```
JumpTable:      jmpRoutine1
          jmpRoutine2
          jmpRoutine3
          ... etc ...
```

The cool thing about this is that each entry in the table is exactly 6 bytes apart. We know this because a JMP instruction with a full 32bit address after it is 6 bytes.

This means, that to jump to "Routine3" in the above jump-table example, we could do this:

```
          leaJumpTable,a0
          add.l #12,a0
          ; Add two 6's to A0
          jsr(a0)
```

This should be reasonably clear. We get the address of the jump-table into A0, add 12 to it, which will take us to the line reading:

```
          jmpRoutine3
```

...and then JSR to it using the instruction:

```
          jsr(a0)
```

This form of addressing is called Indirect. We are JSRing to the address held in A0.

This example is three lines long, but we could easily do it in two:

```
          leaJumpTable,a0
          jsr12(a0)
```

In this example, we are asking the JSR instruction to add 12 to the contents of A0 before JSRing to it. So why is all this relevant?

Well, when you open a library we get a pointer to a jump-table, which moves backwards in memory from the library base. The entry in the jump-table for the OpenLibrary function just so happens to be 552 bytes back from the library base. So let's have a look back at our library opening code:

```
        move.l        $04,a6
        move.l        #$00,d0
        lea          DosName,a1
        jsr          -552(a6)
        move.l        d0,DosBase
```

This is all well and good, but there are some real obvious problems here. The first is that you would have to remember a huge amount of numbers to use any library.

You'd also have to remember to move the right library base into A6 before calling the function. If you get it wrong, the chances are your Amiga will simply crash, and that will be the end of it. Assembly language makes this sort of operation much easier. If you've already glanced ahead and had a peek at the example program, then you'll see this sequence of lines to open the dos library:

```
START:          leaDosName(pc),a1
        move.l    #$00,d0           ; We're not
fussed which version
        SYSOpenLibrary
        move.l     d0,DosBase
        beqEXIT            ; No dos, amazing. Abort.
```

What's the SYS instruction then? And why aren't we setting up the exec.library base in A6? And how come we can specify OpenLibrary, and not -552?

Good questions, and fortunately I have answers to go with them! SYS is not a real instruction, it is a macro. A macro is something that we can refer to as one single name, and it might expand to one or more assembly language instructions. For repetitive tasks, such as library access, it makes sense to come up with a scheme which reduces the amount of typing you have to make (and this the amount of typographical errors also), and makes everything easier to read.

For this sort of task, we turn to macros. The definition for the SYS macro looks like this:

```
SYS:      macro
        move.l     _EXECBASE,a6
        jsr_LVO\1(a6)        ; exec.library access
macro
        endm
```

By including the above in our program, we generate *no code at all*. We just say to the assembler: "Whilst you're assembling this program, should you come to a reference to an imaginary SYS instruction, please include this lot instead". We can define a macro like this:

```
MacroName:        macro
; put our macro here
            endm
```

Our SYS macro contains two instructions. The first moves the exec.library base into A6.

We are not using $04 directly, we are referring to a predefined value. This is better programming practice, and it reads better. We can define this value using the EQU assembler directive:

```
_EXECBASE:      equ    $04
```

Again, as with macro definitions, this generates NO CODE. Instead, it instructs the assembler to replace every occurrance of "_EXECBASE" in your source code with "$04". We then use the JSR instruction to call the library function:

```
        jsr_LVO\1(a6)
```

Time for alarm bells. This looks nasty. Macros, like machine code instructions, can take parameters: extra options which dictate the action that they take. We use our SYS macro like this:

```
          SYSOpenLibrary
```

This actually expands to this, when assembled:

```
        move.l    _EXECBASE,a6
        jsr      _LVOOpenLibrary(a6)
```

The \1 in the macro definition meant "Insert the first parameter right here".

Of course, this still does not explain the OpenLibrary, where did that definition come from?

THE INCLUDES

OpenLibraray, and all of the other library functions on the Amiga are already defined for you in special files, which you can include in your program to save you typing them in. In addition to saving you typing time, you also can't make errors typing them in. This is *very* useful. The catch with the Include files, is that they cost money.

If you buy a commercial Assembler, such as DevPac, or a compiler such as SAS/C or DICE, you will get the include files as part of the package. If not, you have to buy them separately. They are not expensive, and come as part of the Amiga Developers Toolkit, which contains documentation on every single library function, as well as stacks of other useful information.

This is available from Commodore at the cost of £23. If you're interested, you can send a cheque for £23 made payable to "Commodore Business Machines (UK) Ltd." to:

Sharon McGuffie,
Commodore Business Machines (UK) Ltd.,
Commodore House,
The Switchback,
Gardner Road,
Maidenhead, Berks SL6 7XA

Include a covering letter explaining that the cheque is for the "3.1 Amiga Developers' Upgrade".

If you're serious about Amiga development, you might also like to enquire about becoming a registered developer at the same time.

HOWEVER!

We've managed to get the 2.04 assembler include files included on this months cover disk! These files do not offer any of the include information for specific 2.1 or higher operations, but will work for this course.

Of course, we weren't able to include all the examples, autodocs, debugging utilities and other things which you will find on the Amiga Developers Toolkit (a good handful of disks worth of stuff!), so it's still worth paying up 23 quid if you're serious about using your Amiga for programming.

SO, WHAT ABOUT THE REST OF THE PROGRAM?

Now we understand the basics of Macros, we can move to the main listing. The first thing we do is to open the dos.library, version 0. We then store the result of this (which is in D0), the dos.library base,



The DevPac Lite assembler includes a powerful debugger. We'll be looking at this next month.

into DosBase using a move.l. If OpenLibrary is unable to open a library for some reason, it returns 0 in D0. We test for this condition using a beq (branch if equal to zero). Having successfully opened the dos library, we can then use it to show our text message.

It will be puzzling, but bear with us. Over the coming months we'll deal with dos calls more thoroughly. In the meanwhile, you'll have to trust me that it works the way I say! File access is achieved using a file handle. A handle is a magic number which dos uses to work out which file you are talking about. Files don't necessarily have to be on disk, they can be CLI windows, or a connection to the printer.

When you run a program from your CLI or Shell, that program is able to ask the dos.library which file handle corresponds to that window for outputting information and inputting information. This is done using the Output and Input functions. We call the output function like this:

```
DOS   Output
```

The DOS macro ensures we call the right library, and Output is the name of the function.

The appropriate handle is then returned in D0. We then set up the three required parameters for a call to the dos function Write. Write is used to write a specific amount of data from a given point in memory to a named file handle. Write's three parameters are:

```
d1    File handle to use
d2    Address of memory to be written to
      file
d3    Amount of bytes to be written.
```

We point d2 to the string "Hello World",10 (the 10 is the code for "Newline"), and d3 to the length.

We could count up the number of bytes ourself, but we can make the assembler do the work as you can see in the listing. We can then call the Write function using the DOS macro:

```
DOS   Write
```

Write returns the number of bytes written, and normally we should test to check for errors, but in this case we're not fussed.

Since we've now finished with the dos.library we now close it. This is very important! Every time you Open a library, you must remember to close it. Closing a library is simple, you put the library base in A1, and call the exec.library function CloseLibrary. We do this in the listing using the following couple of lines:

```
move.l  DosBase,a1
SYSCloseLibrary
```

Finally, we move zero into D0 and return from the program using RTS. This tells the program which called us (the shell, for example) that we are done now, and no serious errors occurred.

Since we've written this program so neatly, and used Output instead of opening our own window, we can take advantage of the CLI/Shell's command line redirection to force output to go wherever we want, knowing that our program will read the appropriate file handle using Output.

For example, if we assembled the program to disk as "ram:test.x", we could put the "Hello World" into a separate file using this shell command:

```
8.System3.1:> ram:test.x >ram:hello
```

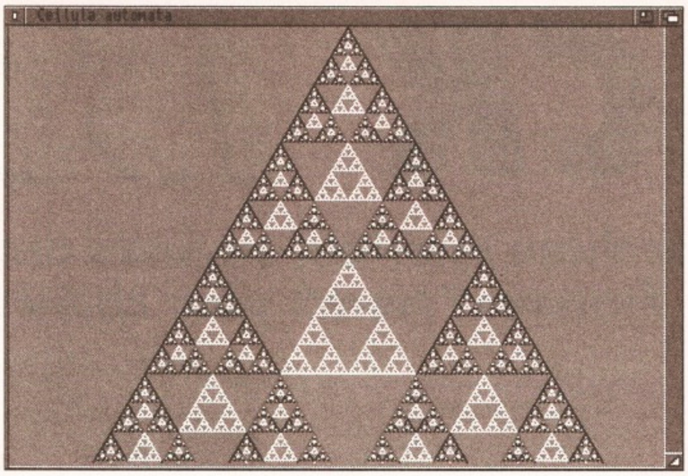
If we then show the contents of this file using the shell command type:

```
8.System3.1:> type ram:hello
Hello World!
8.System3.1:>
```

That's enough confusion for this month.

Next time around we'll be taking a closer look at libraries, and introducing some new 68000 commands to make these programs even shorter. This month's cover disk contains the full listing to this month's program and also Devpac Lite, a demonstration version of DevPac. Happy coding!

Toby AS



As a special bonus on this month's coverdisk we have a few special PD programs, including this one (called Cell_auto) which generates a fractal pyramid thing.

LISTING 1: HELLO WORLD PROGRAM IN ASSEMBLY LANGUAGE

```
      ttl"Hello world program in Assembly Language"

;
; ========================
; Amiga Shopper Assembly Language Course, Part IV:
;
; The great HELLO WORLD program!
; Tested with DevPac 3 and DevPac Lite.
;
      section  HelloWorld,code
;
ENTRY_POINT:   bra.s START        ; Call start of program.
;
; — Embedded version string: ....
VERSION: dc.b  0,"$VER: hello.asm 1.00 (6.11.94)",0
;
; — Include files ....
      incdir   "inc:"
      include  "exec/exec.i"
      include  "exec/funcdef.i"  ; You may not need this.
      include  "exec/exec_lib.i"
      include  "dos/dos.i"
      include  "dos/dos_lib.i"
;
; — Equates ....
_EXECBASE:  equ$04      ; exec.library base.
;
; — Macro Definitions ....
SYS:     macro
      move.l   _EXECBASE,a6
      jsr_LVO\1(a6)      ; exec.library access macro
      endm

DOS:     macro
      move.l   DosBase,a6
      jsr_LVO\1(a6)      ; dos.library access macro
      endm

;
; — Main Program: ....
START:      leaDosName(pc),a1
      move.l   #$00,d0        ; We're not fussed which version
      SYSOpenLibrary
      move.l   d0,DosBase
      beqEXIT        ; No dos, amazing. Abort.
;
; — Find output channel for CLI/Shell window ....
      DOSOutput
;
; — Show our string ....
      move.l   d0,d1        ; Set channel to shell/CLI
      leaOutputString(pc),a0
      move.l   a0,d2
      move.l   #OutputString_END-OutputString,d3
      DOSWrite
;
; — Close dos.library and exit ....
      move.l   DosBase,a1
      SYSCloseLibrary
;
; — Now quit this program ....
EXIT:    moveq #$00,d0        ; Exit program, no error.
      rts
;
; — Data for this program ....
DosBase: dc.l  0        ; Space for dos library base
DosName: dc.b  "dos.library",0      ; Dos library name
;
OutputString:  dc.b  "Hello World!",10
OutputString_END:
;
; *** END OF PROGRAM ***
```

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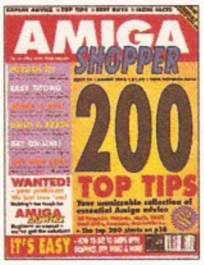
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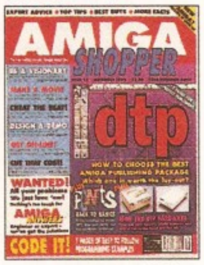
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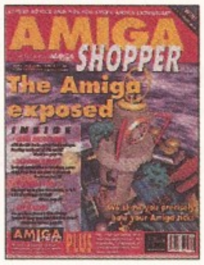
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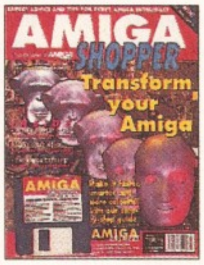
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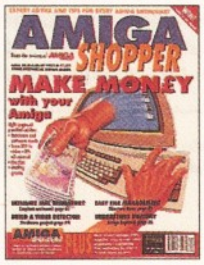
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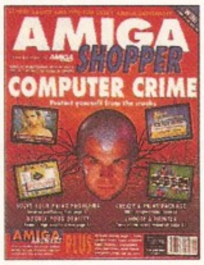
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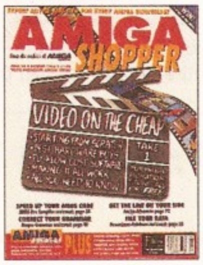
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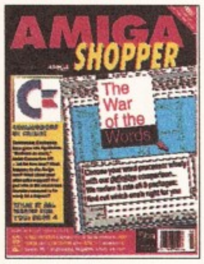
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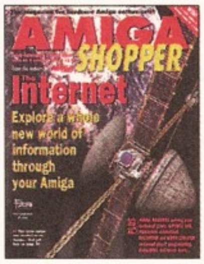
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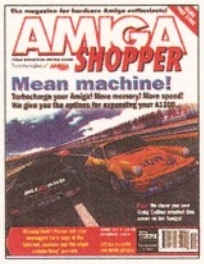
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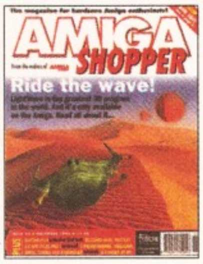
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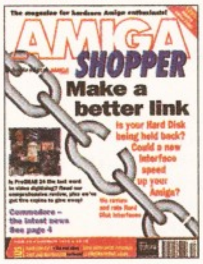
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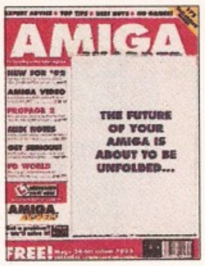
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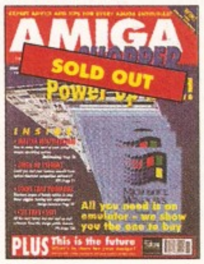
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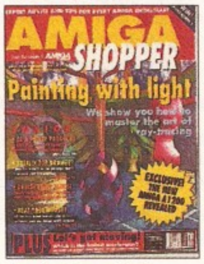
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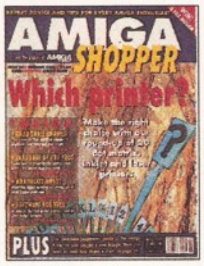
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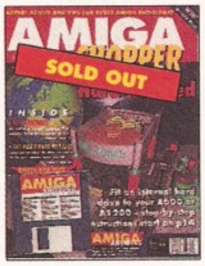
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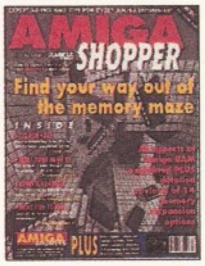
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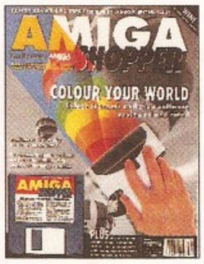
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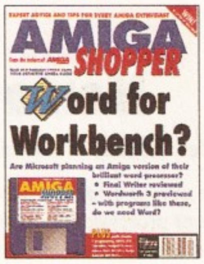
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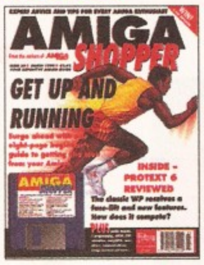
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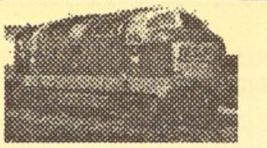
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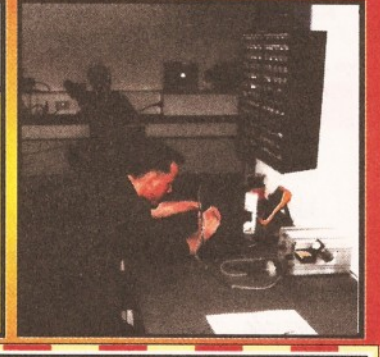
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Word of the month – Callipygian.

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Got something on your mind? Get it off with the Amiga Shopper letters pages! The best letter we print every month wins £25! Send your letters to "Talking Shop", Amiga Shopper, 30 Monmouth Street, Bath, Avon BA1 2BW.

We've had the usual bumper crop of interesting letters this month, with the subjects ranging from the future of the Amiga to our review of the word processor Protext. So what do you lot think? Replies, on a postcard please, to the usual address...

ANALYSING AMIGAS



I'd like to make a few points about the 'ideal' Amiga range of products.

● DiskDrives – Every new Amiga should include a high density diskdrive. In my opinion it was a very big mistake not to include one with the A1200. (Had they done so, it would have enabled developers to put all AGA software on high density discs, which reduces the costs, and we would all have had a HD drive)

● CPU – The 'big box' Amigas, which are obviously meant for the more 'serious' tasks, should have a full processor (with MMU) and an FPU as standard. This will encourage developers to write code that actually uses an FPU. Lower end Amigas, as the A1200, should have an EC (without MMU) processor and lack an FPU, since most users will not need them, and it will reduce costs. Maybe the lower end Amigas can have an FPU option.

● Memory – The lower end Amigas (read: A1200) should have one or more SIMM slots as standard on the motherboard. This is much cheaper then having to buy a memory card, which also fills up your only expansion slot. I think most people would happily pay a little more when they buy the machine instead of paying a lot more later on.

● Expansion – The PCMCIA slot should be dropped, in favour of a 32-bit expansion port (a bit like the side expansion slot of the A500). While PCMCIA was perfect for the A600, it has no use at all on the A1200. Maybe an extra parallel port could be added on the lower end Amigas. (Because of the absence of expansion ports, a lot of peripherals use the parallel port).

● Hard Disk – The IDE interface should definitely stay on the lower end Amigas. The high end Amigas should have a SCSI-II interface and maybe the IDE added as an extra. The user can then choose at dealer level wether he wants a SCSI or an IDE Hard Disk.

The lower end Amigas should have the option for a 3.5" IDE Hard Disk since they are much cheaper. (Contrary to what Commodore says, the A1200's power supply is good enough for a 3.5" drive. I've got an A1200, with a Blizzard 030 accelerator, 4Mb Fast RAM and an external diskdrive – this all works well on the standard power supply!)

● Sound – I think the 8-bit is sound is (more than) adequate for the lower end Amigas. Professionals can add a 16-bit sound card to the 'big box' Amigas.

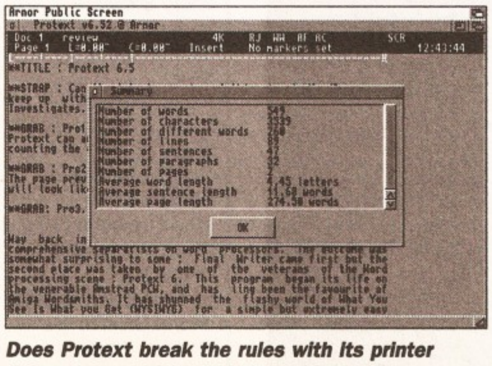
● Keyboard – Please, remove the two blank keys (one next to the shift key, one next to the return key) – they have no use. Clock All Amigas should have a battery backed up clock.

● Monitor/Chipset – With the AGA chipset we can finally display higher resolutions without flickering, but sometimes the Amiga jumps back to 15Khz. Because of this we cannot use a cheap (S)VGA monitor, but have to use an expensive multi/dualsync monitor. The solution could be some dipswitches on the back of the Amiga (like on the PC) which 'locks' the resolution to either 15Khz or 31Khz.

● DSP – I don't think there's a real need for a DSP as standard, it could be an option though.

PS. I hope the new owners of the Amiga range will do things better then the old Commodore.

R.Weijnen Pastoor de Kroonstraat
The Netherlands
E-MAIL : r.weijnen@hsbos.nl



Does Protext break the rules with its printer drivers? See PROBLEMATICAL PROTEXT.

Some interesting ideas there, R, although I'm not sure that I agree with all of them. The first priority of the new Commodore will be to get the existing models out into the shops. Once this has been achieved and the cash starts rolling in, we can see about getting on with the business of designing and building new models.

I especially like your idea about the switch to lock the signal rate, as anything which cuts down on the cost of a decent Amiga setup should be welcomed. A device of the type you mention has already been fitted to one type of Amiga (The A3000), and this allows you to use a cheap PC style monitor and even play games on it (although I'm sure that nobody around here would ever admit to playing games). After all, these days you can pick up a fairly decent VGA monitor for, oh, around £150. This is much cheaper than a comparable Amiga monitor.

I'm also not sure about your statement that 8-bit sound is adequate. I think that the ability to handle 16-bit CD quality audio without any additional hardware would be a great plus, for both serious and games use. Although there are some excellent add on 16-bit systems (such as the Wavetools card and the Studio 16 system), a built-in system would be much more flexible.

We'll be looking at the various samplers available in a future issue, but don't forget to check out our supertest of Amiga Music packages on page 12.

PROBLEMATICAL PROTEXT?

Thank you for reviewing Protext 6.5 in the November issue. However, I would like to reply to your comments about printer drivers.

You said that "Protext talks directly to the printer" and "this is a bit naughty in programming terms". This is not true; Protext accesses the printer only through the operating system (printer.device). Indeed Protext does not "talk directly" to anything, it uses only operating system devices. Protext will print to any printer through printer.device, it doesn't mind if the printer happens to be on a network.

You also say that because Protext uses its

own printer drivers, "if you have... an unusual printer, you are not going to be able to use it". On the contrary, you are more likely to be able to use a printer with Protext than with other Amiga software. Protext in fact has over 400 printer drivers now, far more that Workbench. Which particular "unusual printer" were you thinking of?

Finally you said that you could not see why Protext used non-standard printer drivers. It is essential that it does so, because Protext uses printer fonts. The Workbench printer drivers cannot be used for this. They quite simply do not contain the font information.

One other small comment, if I may. You want the cursor to move back from the start of a line to the previous line. Personally I would consider it to be a quirk it if did that, but we're open-minded so we provide an option to make it work your way. Use 'Keep cursor within text' in the Config editing options menu.

Mark Tilley
Arnor Ltd
Mtilley@CiX.Compulink.co.uk

I'm afraid that I'm not convinced that this is a good enough reason. After all, one of the things that makes the Amiga the excellent machine it is is the fact that there are standard ways of doing things, such as printer drivers and fonts.

The benefit of being able to use printer fonts should be weighed against the loss of standards such as the printer drivers built into AmigaDOS. Having a different set of drivers for each program leads to the sort of compatibility nightmares which bedevil PC DOS programs, with a different printer driver for each program. Is this really what we want when the Amiga already has such an elegant solution to this problem?

Although talking directly to the printer does allow you to do things which aren't possible with the standard printer devices, it does have its downside, particularly for people who have devices such as the Multiface card, which gives an extra parallel port. Protext can't print to this device without some serious hacking of the printer device, which is hardly an ideal solution.

I'm happy to confirm that the "keep cursor within text" option works in the way you describe it, although it's not immediately obvious (either within the program or the manuals) that this is what you need to do. Anyway, I gave Protext 93%, what more do you want?

E-MAIL MESSAGE TO: THE USENET ORACLE (ORACLE@CS.INDIANA.EDU)

Time: 4:56 pm
Subject: tell me
Date: 18/10/94

Why do I have to work for a living?

Why can't I just slouch around on a beach somewhere?

Reply from the Usenet Oracle (oracle@cs.indiana.edu)

And in response, thus speak the Oracle:

You can!

And I will tell you how.

It's very easy.

● **Step one**

Get a job working for the United States Government (preferably the Post Office, but any agency will do.)

● **Step two**

Work diligently for six months to build up a "good record." You want everyone to say what a good worker you were.

● **Step three**

Hurt your back. It doesn't matter whether you really hurt it, or just fake it, as long as you can fool the doctor into believing it is hurt.

● **Step four**

Get a good injury law suit lawyer. Fill out every form they give you very carefully and have the lawyer check them out before handing them in. Save a copy of everything.

● **Step five**

Fill out the Workers' Compensation Form. Threaten to issue a negligence law suit against them (don't worry, you won't have to, all you have to do is give a threat.)

● **Step Six**

That's it. You no longer have to work for a living. Go slouch around on a beach somewhere (note that slouching is bad for your back however). Bring a lap top computer with a modem connected to a cellular phone so you can tell me how great life is.

IMPARTIAL INFORMATION

At the time of writing this letter I'm still waiting to see the outcome of the Commodore management buy-out. Whatever the outcome, I have been impressed by your honest coverage of the whole affair. Many Amiga magazines have been covering the Commodore saga poorly, to say the least, often contradicting themselves.

Needless to say, they aren't any of Future's magazines and Amiga Shopper definitely holds the crown for the serious low-down on anything Amiga. And as for Commodore, well, after watching Chris Eubank win another lost fight last night, I suppose anything is possible.

Which brings me to a lost fight of my own, modelling 3D objects. How about a new set of tutorials, covering software such as Imagine and LightWave? Specifically on 3D modelling, which is probably the hardest part of any modelling task and working up to finished objects of reasonable complexity. Certain tools could also receive some extra attention like the use of Knots in Imagine; whenever I try and use them, knots is exactly what I get.

As this is one of the things the Amiga does best, then who better to write about it than Amiga Shopper and, to be honest, you're getting a bit heavy on the programming just lately.

At the moment your covering Assembler, as well as C, Amos and AmigaDOS, which is all well and good, but it needs to be balanced with something other than programming and operating systems. And apart from that I'm completely stuck on making my own models.

Maybe you could get Craig Collins to share some of his obvious talents in this area. After getting a copy of his video I must admit I considered giving up on my, so far, futile efforts in creating my own words. It would be a far better use of his knowledge than part time work in a warehouse and would pay better as well.

Lee Bettridge
West Kingsdown, Kent

Spookily enough, you'll see an article of the very type you describe in this issue. We've managed to persuade 3D graphics genius Ron Thornton (the man behind the stunning graphics in the TV programme Babylon 5) to spill a few of his secrets. This new series starts on page 28.

I'm pleased that you like our coverage of the Commodore situation. We've tried hard to find out the truth, but this has been pretty difficult. There have been so many rumours and blatant lies floating around that it's been very difficult to filter the truth from the tripe. I think we've done a good job. Check out the latest news on page 4.

Incidentally, we also have a stonker of an article about Commodore lined up for next issue. We've got Dan Stets (of the Philadelphia Enquirer) to look into the reasons why Commodore went into liquidation, and where various people are now. Check it out next month.

We've certainly had plenty of positive feedback about the programming features we've been running, and you are the only person I've seen who has suggested that we are doing too much. What do the rest of you think? Letters to the usual address please...

ADIOS AMIGOS?

I think that this has to be the question that is on every Amiga owner's lips right now. Well, I just had to put finger to keyboard and say what I think is happening to our beloved Amiga.

I believe that the Amiga is slowly but surely dying due to several factors which include the over-the-top advertisement campaign by the consoles such as Nintendo and SEGA and to the ever increasing PC market.

At present, I own an Amiga A1200 with a 170Mb Hard Drive which I installed myself (dead easy!!). I also own a monitor and HP Deskjet plus an external drive. Call me a die-hard but I will hopefully be the proud owner of a CD-ROM. I used to have an Amiga A500 and before that I had a Commodore 64. I believe I have been faithful and committed to Commodore for a very, very long time but where has the commitment from Commodore been to us?

I go into town usually every weekend to check out the latest software releases for my trusty A1200 and I come out despairing and down-hearted. I see empty CD32 boxes stacked in the display windows but on enquiry all I get is: "Sorry, but we are out of stock of CD32s and we have no idea of when, if ever, our next delivery will be".

Even if one of the shops does have a CD32 or 1200 on display, it's usually found in some dark, gloomy corner doing absolutely nothing. Meanwhile the PCs, Nintendos and SEGAs are playing something with a crowd of people pushing and shoving for a look-see at what's on the screen. *This* is what sells the hardware!!

So, would someone please explain why the Amiga sits dark, lonely and silent in the corner gathering dust??? All I can think of is "this is the way of the Atari..."

Then we get people blaming the demise of the Amiga on piracy. From recent reports and news I would I say that the piracy problem is just as rife in the PC/Nintendo/SEGA world as it is in the Amiga world. Again I read in one of the latest Amiga mags that an address was raided by the police in Manchester.

The police claim that they have confiscated pirate CD copying and manufacturing equipment worth around £500,000. Can't people realise that piracy will never go away. Where there's money to be made, the hackers, crackers and pirates will be right around the corner. Only until

FAMOUS FOR 15 LINES...

...with the Amiga Shopper letters pages. Receive your due quantity of fame with a letter in these pages.

Have you got the solution to the Commodore dilemma? Do you need a few minutes of fame to justify your otherwise pointless existence? Hey, you could even get fame *and* fortune, as we'll send £25 to the best letter we print every month. Go on – Warhol would be proud of you.

Of course, in the true spirit of pop art, some things are interesting, and others aren't. So, here's a few of the things that make us want to do silk screens of famous Amiga personalities:

- Interesting and unusual uses for your Amiga
- The subscribers' disk
- The reason for human existence
- Whether David Pleasance should shave off his beard
- New software and hardware you want to see

convictions and stiff sentences are the norm will piracy decrease for fear of being caught.

Tony Mitchell
Deeside, Clwyd

There are several things which aren't helping the Amiga cause at the moment, and the main one is the liquidation. The new owners of the Amiga have already approached several of the major high street stores, and I'm very hopeful that you will soon see A1200s and CD32s on the shelves, along with some good demos of how much better they are than your typical console toys.

Although piracy exists on the consoles (via a hardware device which allows you to copy cartridges), it's certainly not as widespread as it is on the Amiga. After all, it will always be easier to copy a disk medium than a hardware one. I'm very much in favour of stiffer sentences for pirates and the like, as these people are thieves. They may claim that they are doing it because software is too expensive or as a programming exercise, but they are still thieves.

However, most people don't make money out of it. Most do it simply because it's an accepted part of some parts of the Amiga world to crack and distribute pirated software. Although there have been some recent busts of pirate BBS, there is still an underground network of people who think it's cool and clever to crack software. What a bunch of half-wits.

FEATURE FANCY

I have an idea for a feature which I believe would be very useful for those Imagine users who would like more speed (thanks to Amiga Format there should be a few) and that is to analysis the performance of FPU with different speeds of CPU.

A test of 20/25/33/40/50 MHz of FPU on a Standard A1200, Blizzard A1200 and a 40 or 50 MHz 030. First a straight test of floating point performance against FPU MHz for each CPU speed. Which should show a levelling of performance much quicker.

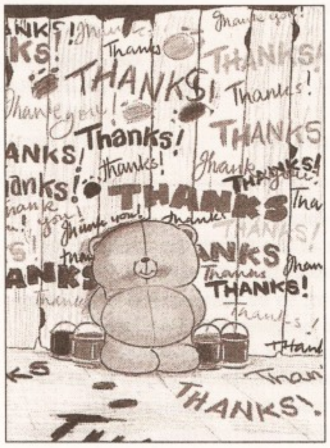
Mr M Wyld
Spalding, Lincs

The figures you are looking for were included in our Supertest of A1200 accelerators in issue 42 (October 1994). See page 98 for details of how to get hold of back issues.

CHEERS, CHAPS!

Thanks for the Imagine Bones tutorial, Gary! This time it seems that 42 was the answer!

Your tutorial has allowed me to get the most out of this powerful feature, a pity that the manual couldn't have done it. I just thought I'd send this wee card to let you and the rest of the



Ahh. It's nice to know that someone appreciates you. see 'Cheers, Chaps!'

folks at Amiga Shopper know that you aren't taken for granted.

Jonathan McBrien

Thanks for the card and the kind thoughts, Jonathan. It's very good to know that the hard work we put into the magazine is appreciated, as you sometimes get the feeling when working on a magazine that you are shouting in a sound-proofed room, where nobody can hear you. It's nice to know that somebody is listening.

POOR PAGESTREAM

I have just spent four days struggling with PageStream V3.0, which I ordered (and paid for), at the beginning of June. After 15 weeks and several phone calls, "it's due next week", I should like to warn your readers *do not upgrade* to V3.0.

A "Readme" file accompanying the package, states that V3.0 is being released before it is ready, due to customer pressure. It assures us that a *free* update will be issued in 4-6 weeks, (is this a record for a first upgrade to a base release version?), then provides a long list of all the features which are not finished.

The list contains most of the features which made me decide to upgrade from V2.22 e.g. leave graphics external, send text to editor (Pageliner), information (details of fonts/styles/graphics/colours used), facing pages, document structure control etc.

In its current state PageStream V3.0 is unusable. This product would not have been released had it been developed for the IBM platform, Amiga users should not be expected to accept lower standards.

Comments such as "Frameless objects will be implemented in the first update after release... we recommend not attempting the tutorials until the next version because frameless text objects are central to some of the lessons" are unacceptable after paying £100 for software which I can't use. You wouldn't buy a car and expect to be told "the brakes don't work yet' but we'll fix them in a few weeks".

I hope we will not be expected to pay for *any* updates until *all* documented features are fully functional. I would also suggest that some-one proof-read the 500+ page manual, which is riddled with errors, some of which are very confusing, for example: "FRAME LOCK – when the frame lock option is off, the picture will be scaled with the frame. When the frame lock option is off, you can scale the picture independently of its frame."

It is disappointing to see what will eventually be a very powerful product being placed but of reach of the average Amiga user. The minimum hardware requirements are Amiga DOS 2.04, 2.5Mb of Hard Disk space and 3Mb of memory. In reality an accelerated 1200/4000 with 5Mb+ memory, 12Mb Hard Disk space and a multisync monitor is required to allow the product to perform at a usable speed.

Although only having a 42Mb Hard Disk (at present), I did a complete installation of V3.0, having backed off PageStream V2.22 to floppies. The installation scripts worked perfectly, disk space used was about 12Mb, and by hacking out necessary files, for example, surplus printer drivers and import/export modules, Pantone colour files (I can only print in B/W) and the online help, this was reduced by over 3Mb. The online help is a luxury I cannot afford as will the spell checker dictionary should it ever appear.

Barry E Matthews
Walsall

As you'll probably already realise, if you read my feature on Pagestream 3 last issue, I agree with most of your points. The program is not, at this point, usable. However, several upgrades have appeared since then, and several of the missing features have now been fixed, as have some of the bugs. Unfortunately, these have only been made available to users of Compuserve and other on-line services, so if you don't have a modem, you will probably still be stuck with a rather dodgy program.

Soft Logik have announced that they will be sending out an upgrade at some point in the future to all registered users, but they still haven't. announced when this will be. AS

CONTACTING THE TALKING SHOP

To add your contribution to any of the debates going on in this page send your letters to :

Talking Shop
Amiga Shopper
30 Monmouth St
Bath
Avon BA1 2BW

Alternatively, you can E-Mail them to :

Letters@Amshop.demon.co.uk (Internet)
2:2502/129.1 (FidoNet)
240:370/0.50 (MercuryNet)

All letters received at these addresses will be considered for publication unless you specifically advise us otherwise.

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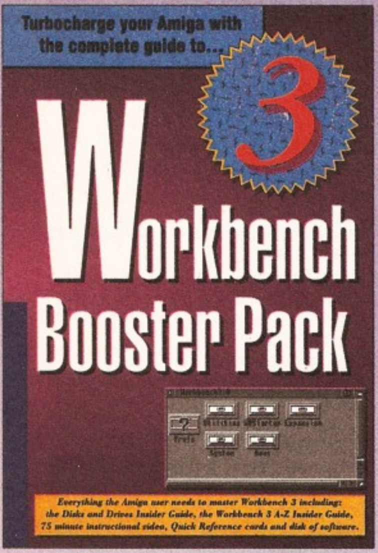
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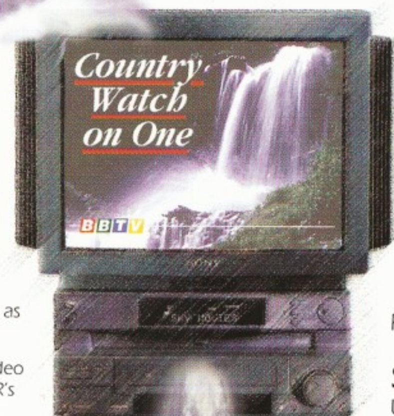
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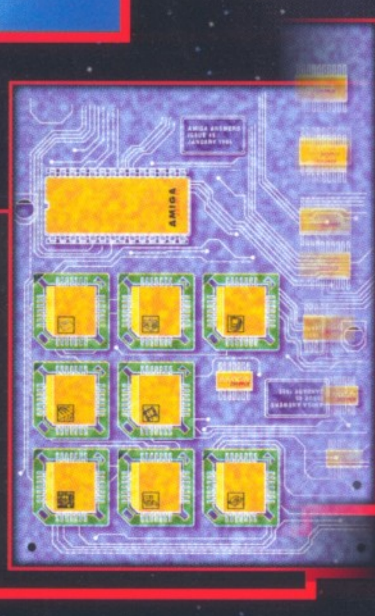
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